Men's Career Development and Marriage Timing During a Period of Rising Inequality

Oppenheimer, V.K.; Kalmijn, M.; Lim, N.

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MEN'S CAREER DEVELOPMENT AND MARRIAGE TIMING DURING A PERIOD OF RISING INEQUALITY*

VALERIE KINCADE OPPENHEIMER, MATTHIJS KALMIJN, AND NELSON LIM

Based on data from 1979–1990 NLSY interviews, we investigate the implications of rising economic inequality for young men's marriage timing. Our approach is to relate marriage formation to the ease or difficulty of the career-entry process and to show that large race/schooling differences in career development lead to substantial variations in marriage timing. We develop measures of current career "maturity" and of long-term labor-market position. Employing discrete-time event-history methods, we show that these variables have a substantial impact on marriage formation for both blacks and whites. Applying our regression results to models based on observed race/schooling patterns of career development, we then estimate cumulative proportions ever married in a difficult versus an easy career-entry process. We find major differences in the pace of marriage formation, depending on the difficulty of the career transition. We also find considerable differences in these marriage timing patterns across race/schooling groups corresponding to the large observed differences in the speed and difficulty of career transitions between and within these groups.

During the past 25 years, the incidence of delayed marriage in the United States has increased rapidly. This trend has been particularly characteristic of blacks—so much so that it implies a substantial rise in nonmarriage among African Americans (Mare and Winship 1991; Oppenheimer 1994). For example, between 1970 and 1993, the proportion of white males aged 25–29 who were ever married declined from 82% to 54%; for blacks in this age group the decline was from 72% to 39% (U.S. Bureau of the Census 1994).

Two types of explanations for these changes have been especially prominent in the recent literature—one female-oriented and the other male-oriented. Those adopting the female-oriented approach argue that the desirability of marriage has declined because of women's rising economic independence, achieved through either their own employment or welfare receipts. This perspective arises partly out of Becker's theory of marriage (1981), which stresses the division of labor between the spouses as the major gain to marriage. Exchange theory provides a rough counterpart in sociology (Cherlin 1992; Farley 1988; Goldscheider and Waite 1986; McLanahan 1991; Schoen and Wooldredge 1989).

Although this theoretical perspective has enjoyed considerable popularity, more recently it has been seriously questioned (Oppenheimer 1994, 1995, 1997). For example, Oppenheimer suggests that the economic independence argument, based on the specialization model of the gain to marriage, is essentially an argument for *nonmarriage*, not *delayed* marriage. At least for whites, however, the trend is predominantly one of delayed marriage. Oppenheimer suggests that specialization is a high-risk strategy in a small independent nuclear family system. The temporary or permanent loss of the services of one spouse specialist can seriously jeopardize the welfare of both the children and the remaining spouse. On the other hand, two-earner families can provide economic flexibility and backup over the family's developmental cycle. In the past, families often have relied on the employment of their teen-age and young adult children to provide this function; today it is mainly accomplished by the periodic or regular employment of wives.

Much of the empirical work on the independence hypothesis also has been generally negative. At any given time, indicators of women's economic independence have not generally had a negative effect on marriage formation. For example, under an independence argument, better educated women should be more economically independent of marriage; micro-level regression analyses, however, show that once school enrollment is taken into account, they have a *higher* rather than a lower propensity to marry. In addition, most micro-level analyses find that women's employment and earnings have either no significant effect or, more usually, a positive effect on marriage formation (Cherlin 1980; Goldscheider and Waite 1986; Lichter et al. 1992; Mare and Winship 1991; Oppenheimer, Blossfeld, and Wackerow 1995; Oppenheimer and Lew 1995; Teachman, Polonko, and Leigh 1987). Furthermore, Oppenheimer and Lew (1995) found that the only significant effect of white women's occupations on marriage formation was the negative effect of having an unskilled job compared to having a white-collar job.[1] In sum, there is little empirical support for the argu-

*Valerie K. Oppenheimer and Nelson Lim, Department of Sociology, University of California, 405 Hilgard Ave., Los Angeles, CA 90095; e-mail: valko@ucla.edu.. Matthijs Kalmijn, Department of Sociology, Utrecht University, The Netherlands. This is a revised version of a paper presented at the 1996 annual meetings of the Population Association of America, New Orleans. The research was supported by NICHD Grant RO1-HD27955. We are grateful to Kazuo Yamaguchi for his suggestions on how to deal with the problem of missing information on time-varying covariates and for other methodological advice in the early stages of the project. Responsibility for any statistical drawbacks of the study are ours alone, however.

1. Marc and Winship obtained somewhat mixed results. Using census data, they found that schooling and earnings had a positive effect on women's marriage propensities, whereas their employment status had a somewhat negative effect. It is unclear why earnings would have a positive effect (albeit a weak one), while employment has a negative impact; and it is difficult to see how this provides very consistent support for the independence hypothesis.

ment that women's presumed greater economic independence is responsible for the substantial increase in delayed marriage during the past 25 years. All this suggests that taking a closer look at the relatively neglected issue of men's marital behavior might be worthwhile.

The emphasis on men's economic position has a long tradition in demographic theory and research on Western societies, where marriage historically has been contingent on the ability of young couples to establish an independent household above some socially acceptable minimum level (Arensberg and Kimball 1968; Banks 1954; Easterlin 1978, 1987; Goldstone 1986; Malthus 1968; Watkins 1984). Despite this long theoretical tradition, however, there has been little empirical research specifically focused on men. One reason is that although men's economic characteristics often have been considered the *determinant*, the *consequence* of interest has usually been the demographic behavior of women—namely, their marriage timing and proportions ever marrying, their fertility behavior, or the proportion of families that are female headed (Easterlin 1987; Lichter et al. 1992; Wilson and Neckerman 1987). Hence men's family behaviors often have been ignored. The substantial decline in young men's labor-market position since the mid-1970s, however, provides a strong argument for the importance of studying their marital behavior more directly (Bound and Freeman 1992; Duncan, Boisjoly, and Smeeding 1996; Juhn 1992; Juhn, Murphy, and Pierce 1993; Murname and Levy 1993; Welch 1990; Wetzel 1995).

There have been some multivariate analyses of the role of men's economic characteristics in marriage behavior; but many of these analyses utilize aggregate-level data, and most are essentially marriage-market analyses. Nevertheless, all of these macro-level studies support the idea that men's labor-market position has a strong effect on both men's and women's marriage timing (Bennett, Bloom, and Craig 1989; Fossett and Kiecolt 1993; Lichter, LeClere, and McLaughlin 1991; McLanahan and Casper 1995; Qian and Preston 1993; South and Lloyd 1992). A major drawback of this work is that most researchers used aggregate-level data to model an individual-level phenomenon, and the results may not always hold up in micro-level analyses (cf. Lichter et al. 1991; Lichter et al. 1992).

Lichter and his colleagues (1992) combined some of the advantages of macro and micro approaches in a multilevel study in which measures of the availability of economically viable males in labor-market areas (treated as proxies for marriage markets) were included in micro-level equations of women's marriage propensities. They found that the availability of employed men and of men with earnings above the poverty level had a positive effect on women's marriage formation. Their efforts represented an advance over purely micro-level analyses of women's marriage formation; but it is difficult to include very detailed, relevant contextual information on the characteristics of potential mates. In this respect, a direct examination of the determinants of men's marriage timing might also help shed considerable light on the influence of men's socioeconomic characteristics on women's marriage timing. Moreover, the few available micro-level or multilevel analyses of men's marriage formation also indicate that their economic position has an important effect on marriage formation (Goldscheider and Waite 1986; Lloyd and South 1996; Mare and Winship 1991; Teachman et al. 1987).

We expand on previous research by focusing on the relationship of men's career cycle to the timing of their first marriage. We use data from the National Longitudinal Survey of Labor Market Experience, Youth Cohorts (NLSY), first conducted in 1979 when respondents were aged 14–22. We follow the cohorts of non-Hispanic white and black males annually through the 1990 interview, when they were aged 25–33. Because it is a large panel study limited to young people and it includes very detailed annual data on marriage and economic behavior, the NLSY is a valuable data set for investigating the role of young men's transitions to work in marriage timing. Also, the NLSY cohorts matured during a period of rapidly increasing economic inequality; thus they are particularly valuable cohorts to study to assess the consequences of labor-market inequality for marriage timing. Furthermore, by following the NLSY cohorts through 1990, we have been able to observe their career development for much more of their young adult life-course than previously observed by other researchers using longitudinal data.

We conceptualize the effect of men's economic position on the timing of first marriage in terms of the relationship between the transition to work and the transition to marriage. Rather than viewing the transition to work as a step, however, we treat it as a process that is typically characterized by increasing degrees of career "maturity" over time. Moreover, we would expect the length and severity of this process to vary across historical periods and among young people reaching adulthood during the same period. Our goal is to investigate whether career-entry difficulties affect marriage timing—a two-step endeavor. The first step is to answer the question of whether, in any short time interval, indicators of recent labor-market difficulties have a negative impact on marriage formation. We explore this issue by means of a discrete-time event-history analysis, an approach generally similar to that of other recent micro-level analyses of marriage formation.

If career transitions are a process occurring over time, however, economic problems in conjunction with the persistence of those problems define how difficult the transition is: the less time economic problems persist, the less difficult the career-entry process. Hence comparing the effect of an easy with a more difficult transition on marriage timing also involves examining career-entry patterns over the young adult life course and assessing their *cumulative* impact on marriage timing. It is here, at the second step, that our approach is most distinctive: We use observed patterns of economic behavior over the young adult life course to set up models of easier versus more difficult career transitions. Then by applying the appropriate regression coefficients and using life-table methods, we compute and compare simulated survival curves for men undergoing each type of transition. Thus we can deter-

mine whether the ease or difficulty of the transition has had a major impact on the pace of marriage formation over the young adult life-course of the NLSY cohorts.

Recent research has shown that, after declining, economic equality has been rising during the past 25 years. How much these changes are due to the rise of the global economy, industrial restructuring, or other macroeconomic factors is unclear and beyond the scope of our study. It is clear, however, that the labor-market position of younger, less-experienced males has deteriorated relative to older, more-experienced workers, suggesting that a substantial proportion of young men have been encountering difficulties in the career-entry process during the 1980s and early 1990s (Juhn et al. 1993; Wetzel 1995). Moreover, the economic position of both moderately educated and less-educated young men has been most seriously affected (Duncan et al. 1996; Juhn et al. 1993; Murname and Levy 1993). Black males have been particularly affected, especially with regard to their employment status (Bound and Freeman 1992; Juhn 1992; Welch 1990). Hence race and schooling currently should be strong predictors of the nature of the career-entry process and, consequently, need to be considered in investigating the role of career-entry difficulties in marriage timing. Furthermore, even within education groups there is evidence of an increase in economic inequality, suggesting that there has been a considerable rise in within-group variability in the difficulty of career development (Juhn et al. 1993). All these changes indicate that we should observe substantial differences between and within race/educational groups in the ease or difficulty of career-entry transitions among NLSY cohorts. This, in turn, should lead to substantial differences in the pace of their marriage formation. A second goal of our research is to assess whether this is indeed the case.

Our investigation of the effect of young men's career development on marriage timing is divided into four parts. First we develop several measures of young men's current career maturity and economic position as well as their likely long-run labor-market position. In the next section, we employ a discrete-time event-history methodology to investigate whether these economic indicators have an impact on marriage formation in any given interview year, and whether this impact differs for blacks and whites. In the third section, we briefly outline some of the major race/education inequalities in the career-entry process. Finally, we compare race/schooling differences in the projected survival curves of men undergoing easy compared to difficult transitions.

CONCEPTUALIZATION AND MEASUREMENT

A Dynamic Perspective on Careers

The hypothesis that a young man's career-entry status should affect his marriage timing is based on a number of theoretical and substantive considerations. First, young men in the early stages of their careers usually have relatively low earnings, often below the poverty line, making it difficult to set up an independent household—at least one that meets socially defined minimal standards. In a sense, this is a threshold hypothesis; however, thresholds may exist not only around poverty-level incomes but also at higher incomes if, as seems reasonable, couples in higher socioeconomic groups also have higher standards of minimally acceptable living levels for setting up a marital household. Hence, lacking a direct measure of relative economic status, we would expect men's earnings to have a continuously positive effect on marriage formation, although its strength may level off as earnings rise.

We also argue that career-entry difficulties should promote delayed marriage because they usually involve considerable uncertainty. First, uncertainty about a young man's ability and/or willingness to make a stable commitment to adult responsibilities make him a poorer marriage risk during this period. Second, the uncertainties associated with career immaturity are also likely to affect assortative mating. Here we draw on Oppenheimer's (1988) application of job-search theory to searching in marriage markets. She argues that because marriages are supposed to be long-term arrangements, and because the nature of an individual's work structures life in a variety of ways, assortative mating is impeded during periods of career immaturity, characterized by uncertainty about individuals' long-term life styles. This is especially true if one considers that a lot of selection probably occurs very early in marriage markets—long before a couple have become emotionally involved or even before they may have dated. Without adequate social cues, however, such "presorting" becomes extremely difficult. The result is often more time spent searching or perhaps becoming involved in nonmarital cohabitations as an interim arrangement. In any event, the result will be greater delays in marriage.

Our emphasis on the role of career development in marriage timing is, in part, an outgrowth of life-course analysis—especially in its emphasis on interrelationships of different types of life domains, such as work and the family, and on the variability in the nature of life-course behavior and life-course transitions (Elder 1977, 1983; Featherman et al. 1984; Hogan 1978, 1980, 1985; Modell, Furstenberg, and Hershberg 1976; Oppenheimer 1974, 1982). Our analysis reflects a somewhat different perspective on the transition to work. We argue that the nature of career transitions is complex and often rather messy. Hence instead of trying to determine whether and when men have completed the transition to work as a *step*, we have conceptualized the phenomenon as an ongoing *process*. Its status at any time is indicated by measures of career "maturity," a term used to characterize career status and not the individual in any social psychological sense of the term. We believe that no variable alone can adequately describe career maturity; hence an important goal of the study is to develop a variety of indicators of a young man's career-entry status and, where possible, of his long-run labor-market position.

The Explanatory Variables

We have developed five time-varying covariates to measure different facets of the current status of young men's career-entry process: school enrollment combined with time out of

school, educational attainment, job type, yearly work experience, and annual earnings. Interview year is also used as a control variable. These variables tap several related dimensions: the respondent's current level of career maturity, current economic position, and likely long-run socioeconomic position and labor-market stability. Although these variables overlap somewhat and are causally connected, each also adds a somewhat different perspective on the career-entry process and its impact on marriage timing.

School enrollment and time out of school. We view school enrollment, in part, as a period of human capital investment and hence as an indicator of career "immaturity." As most previous researchers, we expect it to have a negative effect on marriage formation, but this effect should be reduced once work behavior and earnings are added to the equation. Schools often provide good marriage markets and because the analysis is limited to those aged 17 or older, many of the NLSY males were in college or postgraduate training, and others were probably only part-time students. Hence in some cases, the economic position of the young man and his prospective spouse might make marriage possible.

Demographers usually examine demographic variables in relationship to age, and most multivariate analyses of marriage have included age as their major life-cycle variable. Age, however, can obscure important differences in work-related characteristics and behavior when the focus is on the career cycle. The effect of educational attainment is especially likely to be distorted because careers develop rapidly during the first few years out of school, but the better educated leave school at a later age. Hence those in different educational groups but who are the same age will be at somewhat different stages of their career cycle. The result would be a reduction in any positive effect of education on marriage formation—an effect that can become quite pronounced, for males at least, when time out of school is used as the life-cycle measure (Oppenheimer 1994). Therefore we have substituted time out of school for age in the analysis and have combined it with school enrollment to create a single categorical variable.

The NLSY collected information on school enrollment at each interview, permitting a much more precise measurement of time out of school than is obtained by the usual practice of subtracting the number of school years completed from the respondent's age and adding six. In addition, because it is possible to leave school more than once, we added another time-varying covariate as a control: whether the respondent had ever experienced a break in schooling by each interview. At age 30 or older, this was true for 24% of whites and 18% of blacks.[2]

Educational attainment. Educational attainment (measured at each interview) is an important determinant of both current and long-run labor-market position (including the time it will likely take to achieve this). If only the current position is at issue, schooling's positive effect on marriage timing should be reduced or even eliminated once the current labor-market performance variables are introduced. However, if a man's *long-run* socioeconomic position is a factor in marriage formation (e.g., his likely job stability over time) that is not always adequately reflected in his current labor-market behavior, then some positive educational effect should remain. Schooling actually has a dual role in this study. We analyze its direct impact on marriage formation for any given year using regression analysis. Then, because the pace and difficulty of career transitions are greatly affected by educational attainment, we organize the comparisons of the career-entry process and its impact on marriage timing by schooling and by race.

Job type at the previous interview. We use a recently developed life-cycle job typology as one indicator of career immaturity (Oppenheimer and Kalmijn 1995). At each interview, the typology is used to divide the sample into four groups: (1) those who are nonemployed; (2) those in "stopgap" jobs; (3) those in "career" or "career entry" positions (hereafter referred to as career jobs); and (4) those serving in the military. The rationale of the "stopgap" concept is based on the idea that young people frequently work at rather casual, short-term jobs that usually are not part of an institutionalized career path (e.g., fast-food workers, waiters, some retail salespersons, and a number of unskilled, blue-collar and other service workers). Stopgap jobs also provide a possible fallback strategy during periods when more regular employment is difficult to obtain. These may be the only types of jobs, however, that low-skilled workers can find at certain times, especially early in their career cycle. The typology was developed using 1970 census occupation and industry data. Stopgap jobs were defined as occupations (and sometimes occupation-industry combinations) in which the male workers, compared to all employed males, were disproportionately under age 25 and in which, compared to all young workers, were also disproportionately employed part-time. Based on the census data, stopgap employment was found to be very common among young men but to decline rapidly with age. This was also the case with the NLSY cohorts over their young adult life course. We hypothesized that the nonemployed should be the least likely to marry; but those employed in stopgap jobs should be less likely than career workers to marry in any given year if the stopgap designation is indeed a sign of career immaturity and uncertainty about the young person's long-term prospects and of a low current labor-market position.

What the effect of military employment should be is not clear on an a priori basis. Most previous studies have found that military service delayed marriage (Goldscheider and Waite 1986; Hogan 1978; Marini 1985). This may be because it disrupts the normal transition to adult occupational careers by removing people from their social networks or by introducing a hiatus into the transition from school to an adult civilian career job. Most of these studies, however, have examined the effect of military service while the draft was still

2. Estimates of whether a break in schooling had occurred were made for the period before the first interview (1979) by estimating expected age in 1979 if the respondent did not have a schooling break and comparing this to the respondent's actual age in 1979. The actual age exceeding the expected age was interpreted as evidence of a break in schooling.

in force. During the 1980s military service was voluntary.[3] Hence it may no longer disrupt lives and marriage markets; instead it may represent a stable job that provides men with the opportunity to achieve sufficient economic security to marry during a period when the civilian labor-market has become more chaotic. In addition, the military provides subsidized housing and living costs that facilitate marriage. Moreover, the recruitment and testing procedures of the military tend to select men who are already in a better labor-market position and, therefore, are more marriageable.

Work experience during the previous year. Although stopgap employment signifies considerable current uncertainty about a young man's ability or willingness to take on adult family roles, it is not the only indicator of career immaturity. Moreover, it measures employment characteristics only at the date of each interview. Although stopgap jobs tend to be part-time, by definition, in this period of industrial restructuring and during recessions, other jobs may also involve part-time work. Furthermore, part-year employment is another indicator of youthful labor-market instability. Hence we include a variable measuring the extensiveness of employment during the interview year (i.e., the year between each interview). In constructing such a variable, we posit that there is a qualitative difference between part-time and part-year employment. Part-year but full-time employment may signify job instability, one of the chronic problems of young people with little accrued on-the-job training or seniority. It may also be indicative of job experimentation, which often plays a positive role in career development (Johnson 1978; Topel and Ward 1992). Such jobs usually represent a reasonable career option and may signal the start of more long-term employment. In contrast, most part-time employment does not typically provide a viable career opportunity for adult males and, therefore, should be indicative of career immaturity or of general labor-market difficulties.

We make four distinctions in our measure of the extensiveness of employment during a year: (1) no employment during the year; (2) part-time employment (working fewer than 35 hours per week, on average), whether the work is full-year or part-year;[4] (3) full-time employment that is part-year; and (4) year-round full-time employment. Because job experimentation is a normal and often positive part of the career-development process, we adopted a more relaxed definition of full-year employment than having worked 50–52 weeks. In addition, the time between two interviews can be longer or shorter than 52 weeks. Thus we defined full-year employment at each interview as having worked at least 85% of the time between the last two interviews. Our hypothesis is that those working less than full-time/full-year (FT/FY) are less likely to marry in a year. Part-time employment, however, should have a more negative effect on marriage formation than working full-time but only part-year; not working at all during the year should have the greatest negative impact.

Earnings. We hypothesize that earnings, as one measure of the economic ability to set up a marital household at a socially suitable level of living, will have a positive effect on marriage formation. Annual earnings (in 1989 dollars) in log form is used because the effect is likely to be greatest when earnings are relatively low, and any given absolute increment in earnings signifies a large relative effect. Because a log of zero is undefined, respondents who reported no earnings during the previous calendar year were assigned the mean for that year. We created a separate dichotomous variable to indicate this. The interpretation of the earnings/no earnings dichotomy is whether young single men without earnings were more or less likely to marry compared to those with earnings at the mean.[5]

The three labor-market variables defined above—work experience, job type, and earnings—are complementary rather than competing explanations of marriage timing. Stopgap workers frequently are employed only part-time and/or part-year and have low earnings, whereas career workers are more likely to be in year-round/full-time employment and to have higher earnings. Thus to achieve a greater understanding of the causal structure of the process, we estimate several nested models to determine how the progressive addition of different indicators of career maturity affect one another. One issue is whether any effect of stopgap employment is entirely due to the part-time and/or part-year nature of such work. If so, then when work experience is added to the equation the effect of stopgap employment will disappear. If stopgap employment is itself a meaningful indicator of career uncertainty, however, it will continue to have a negative though probably reduced effect on the likelihood of marriage, net of work experience. The earnings variable provides further insights about the causal process. If earnings operate as the mechanism by which both job type and yearly work experience affect marriage formation, any impact of these variables should decrease or disappear when the earnings variable is introduced into the equation. On the other hand, if the effects of the work variables persist, earnings is not the only important factor.

Data and Methods

The NLSY cohorts are representative of American youths born between 1957 and 1964 (Center for Human Resource Research 1992). Interviews were first conducted in 1979 when the respondents were 14–22 years of age, and since then the cohort has been interviewed every year. In compari-

3. Cooney and Hogan (1991) reanalyzed the data set (OCG II) used by Hogan (1978) and found that the effect of being in the military varied by age: It was positive for males under age 20, negative for males ages 20–25, and positive for those ages 26–35. They attribute the positive effect for the older military men to their probably higher rank and greater pay. All this may also reflect the difference between those who were drafted and the professional military.

4. The *hours worked* variable represents the mean hours worked during each week worked since the previous interview. To calculate this we divided the NLSY variable on hours worked since the last interview by the number of weeks worked since the last interview. Where information was lacking in an interview, we substituted the information for calendar year.

5. The value assigned does not affect the estimate of the coefficient for the income variable itself; it changes only the reference group for the *dichotomous earnings/no earnings* variable. It does, however, reduce the size of the standard error.

son to other panel studies, retention rates are high: about 89% of the original sample of males analyzed in this paper were still in the panel in 1990. We focus on the black cross-sectional and supplementary samples combined and on the cross-sectional non-Hispanic white male sample (hereafter referred to as whites) and cover the yearly interviews from 1979 through 1990. By carrying the analysis through the 1990 interview, our study has an advantage over previous studies using the NLSY which typically have not utilized interviews beyond the mid-1980s (Lichter et. al., 1992; Lloyd and South 1996). The right censoring in these studies has meant that a high proportion of the cohorts, particularly the better educated, were still in the very early stages of their career cycle.

In our analysis of marriage formation we employ a discrete-time event-history methodology and use logistic regression to estimate the coefficients (Allison 1982; Yamaguchi 1991). The data are organized into a person-year file, and the regression analyses are limited to those person-years in which each respondent is at risk of marrying for the first time as well as to the year in which the marriage occurred. Respondents who permanently drop out of the sample are also censored. A discussion of how we handled the problem of missing information can be found in the Appendix. Age 17 marks the beginning of the risk period, whether or not this occurred before the first interview. Because much of the information is ascertained at the time of interviews, interview year rather than calendar year is the time unit employed; the dependent variable is whether a first marriage took place in the year between two annual interviews. Whether a first marriage occurred in one interview year is regressed either on the characteristics of the respondent at the previous interview (educational attainment, job type), during the period between the previous two interviews (yearly work experience), or during the previous calendar year (earnings).

Because we use the regression results to compute predicted proportions marrying by year out of school, we have tried to keep the models simple, primarily limiting them to career-related variables. We have also run these models with control variables commonly included in previous research (e.g., family background, parental education, religion, region, and rural-urban residence). Although some of these variables improved the overall explanatory power of the models, they did not generally have any effect on the career-related variables; hence we exclude them from the models reported here. We also exclude cohabitation from the analysis, partly because of the difficulty of linking cohabiting with subsequent marital partners in the NLSY data and partly because the complexity of the cohabitation phenomenon indicated that it would be beyond the scope of this analysis to deal with it adequately. For example, Lichter et al. (1992) added a cohabitation variable to their hazard models of the marriage formation of NLSY women. They found that the variable had a large positive effect, suggesting that when measured in a such a straightforward fashion it was primarily acting as a proxy for being engaged. Thus the variable added little information about the possible role of cohabitation in delaying some marriages.

REGRESSION RESULTS

An Overview of the Pace of Marriage Formation

To provide some perspective to the analysis, we present changes in the proportions ever married by year out of school separately for blacks and whites in Figure 1; we present the differences between blacks and whites by educational attainment in Figure 2.[6] The most outstanding feature of Figure 1 is the slow movement of blacks into marriage. While white patterns might still mainly reflect postponed marriage, it is much more likely that there ultimately will be a substantial amount of nonmarriage among black males. Figure 2 reveals significant educational differences in the pace of marriage formation as well as major black/white differences in the pattern, but we cannot follow the college educated for as many years out of school as is possible for those with a high school degree or less. Blacks exhibit a substantial positive effect of educational attainment on marriage formation, consistent with the hypothesis that a better labor-market position encourages marriage. Moreover, each higher educational group has a large positive effect that persists for as long as we can measure the differences.

The pattern for whites is markedly different. The education effect is positive, but there are not substantial differences among all groups. Men with 1–3 years of college and those with four or more years of college are practically identical in their behavior and marry sooner after leaving school than men with 12 years of schooling or less, who are very similar in their marriage behavior. Further for whites there is a convergence in the proportions ever married: The major difference among educational groups is in the pace of marriage formation rather than in the proportions ever marrying. It is also interesting to note that the black/white differences for men in the same schooling group increase as educational attainment decreases. Thus it is possible that the much weaker economic position of less-educated blacks compared to less-educated whites plays a role in marriage timing.

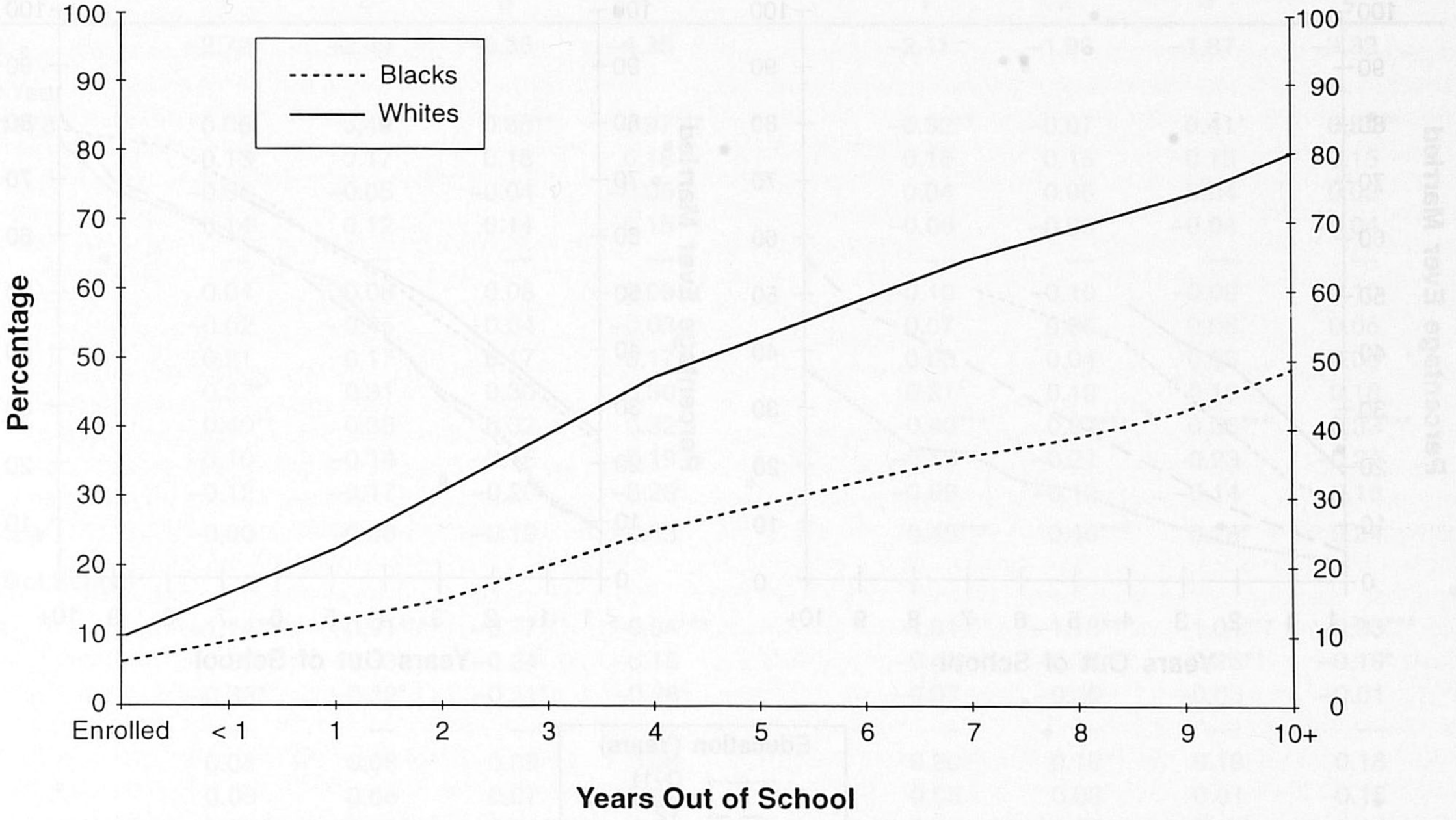
Given the extremely large bivariate race differences in marriage formation by educational attainment and the strong possibility that the effect of other labor-market measures on marriage timing will also vary by race, we have conducted our regression analyses for blacks and whites separately. We have also tested the validity of this approach by conducting the regressions on a merged sample with interactions, and we report on the interaction results as we discuss the models.

Schooling-Related Factors

Four regression models for whites and blacks are shown in Table 1. We start with a model that includes only the basic time variables, school enrollment, educational attainment,

6. These marriage patterns are very similar whether age or years out of school is the time metric used, despite the fact that those with a school break can appear twice in the same time out of school. Whether age or year out of school is used, we do not have the same amount of information on marriage for all cohorts because the younger members of the cohort had not reached the same time out of school (age) by the 1990 interview.

FIGURE 1. PERCENTAGE EVER MARRIED, BY YEARS OUT OF SCHOOL: BLACK AND WHITE MALES AGED 17 AND OLDER



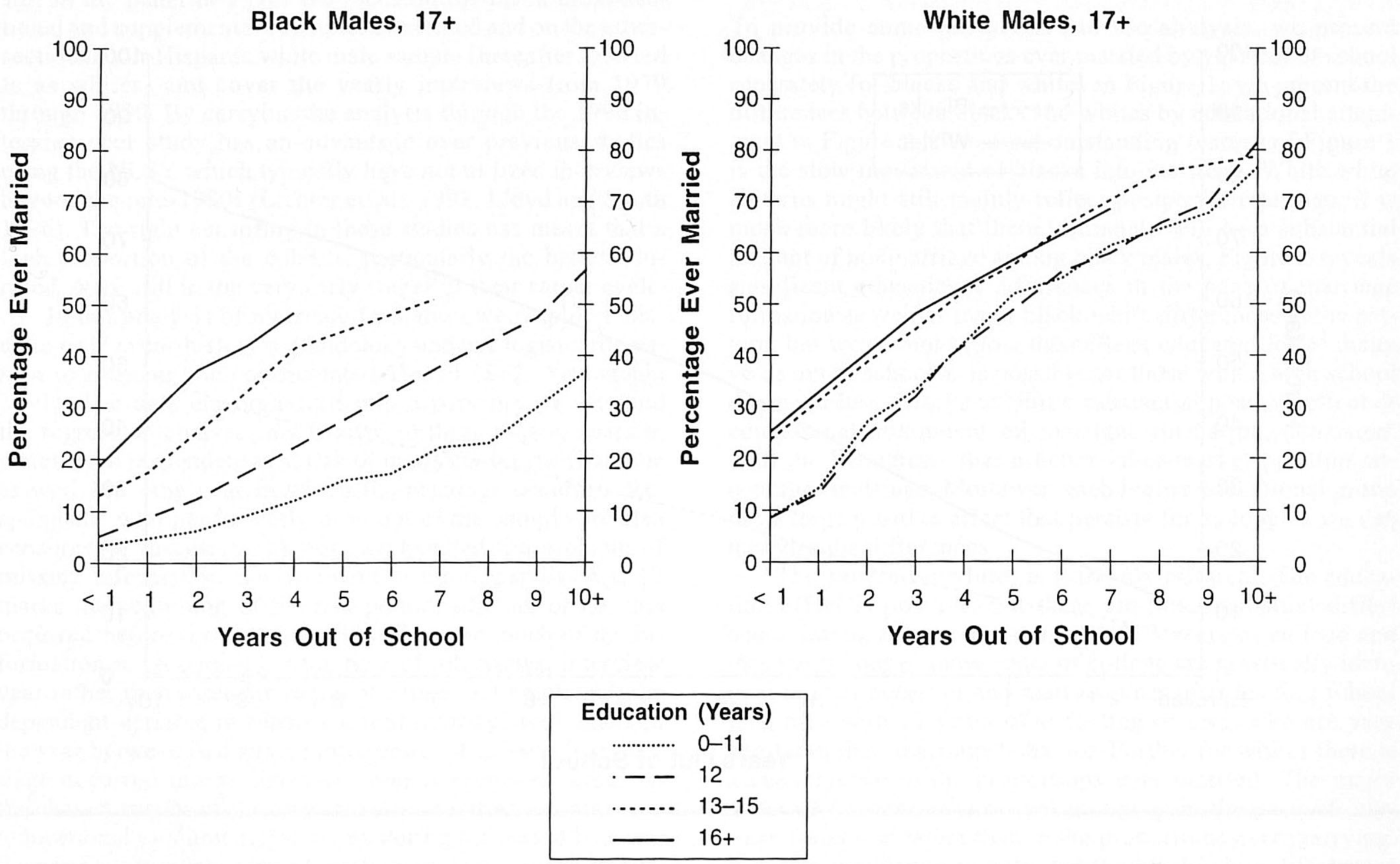
and the school break variables (Model 1),[7] then progressively add the work variables (Models 2 and 3), and finally add the earnings variable (Model 4).

Consistent with most previous studies, we find that school enrollment exerts a large negative effect on marriage formation for both blacks and whites. A finding that has not emerged from past research is that young men's current labor-market performance plays an important role in the lowering the likelihood of students marrying as the size of the coefficient is progressively reduced when the work and then the earnings variables are added to the equation. This is especially true for blacks, for whom the coefficient is almost halved (from –1.14 to –.64) as we move from Model 1 to Model 4, where the interaction analysis shows that the coefficient for blacks is significantly different from that of whites. The coefficient remains large, however, for both groups. Time out of school has the expected positive effect on marriage formation, and the coefficients are substantially reduced when the work and earnings variables are added to the equation.

Educational attainment has a positive but rather different impact on marriage timing for blacks and whites. Among blacks, the coefficients indicate a very strong positive effect on the odds of marrying, consistent with the bivariate data shown in Figure 2. Although young men's current labor-market position plays an important role in this effect, the declines in the size of the coefficients as we move across the models suggest that a significant net positive education effect remains in Model 4. Thus we have evidence of education's importance as an indicator of a young black man's longer run labor-market position. For whites, the dualistic pattern exhibited in Figure 2 is also replicated in the pattern of the regression coefficients in Model 1. The addition of the work and earnings variables, however, changes this pattern. In strong contrast to black dropouts, white dropouts seem to be an early-marrying group whose ability to marry is hampered by their poor labor-market position. Once this is controlled for, a small and insignificant *negative* coefficient, when dropouts are compared to high school graduates, turns into a significant *positive* coefficient. Further, the similarity of whites with some college to those with four or more years of college, and the higher rates of the college graduates compared to high school graduates in Model 1 seem to be due mainly to their much

7. Educational attainment is controlled for in Model 1 because the less educated have lower log-odds of marriage but are the only ones who have been out of school a substantial amount of time. Hence, unless controlled for, they introduce a spurious negative effect of time out of school on marriage formation.

FIGURE 2. PERCENTAGE EVER MARRIED, BY EDUCATION AND YEARS OUT OF SCHOOL



more favorable labor-market position.[8] On the other hand, compared to high school graduates, black college graduates are much more likely than white college graduates to marry. The large race differences in the log-odds of marrying for high school dropouts and college graduates (compared to high school graduates) were significant in the interaction analysis, supporting the bivariate pattern of Figure 2.

Work and Earnings

Starting with job and work status at the previous interview, we see that blacks who were not employed had very low odds of marrying compared to career workers. Although this effect was greatly reduced once the weeks/hours worked and earnings variables were included in the equation, it remained strong in Model 4. Whites exhibited a similar pattern; but it was weaker and became much smaller once the other labor-market variables were added to the equation—a finding that was strongly supported by the interaction analysis. Thus in Model 4, nonemployed whites were 82%, but nonemployed blacks only 60%, as likely as career workers to marry. An important reason for these differences may be that nonemployment at any given time is indicative of a much weaker *long-term* labor-market position for blacks compared to whites. Thus the impact of a current weakness in their labor-market position would be greater for blacks in any given year. For both blacks and whites, those in the military had even higher odds of marrying than career workers.

Stopgap, as opposed to career employment, at the previous interview also discouraged marriage formation equally for blacks and whites. The addition of the amount of the work experience and earnings variables to the model, however, reduced the negative effect of stopgap employment for both groups. These variables, therefore, partly explain why

8. These findings are inconsistent with another recently published study of the NLSY (Lloyd and South 1996), which revealed no effect of education for blacks and a negative effect for whites. These differences may be due to the fact that Lloyd and South used years of schooling in continuous form, thereby forcing a linear relationship when the effect was actually curvilinear (even for blacks). Also, by using age as the life-cycle variable, they minimized any positive effect of schooling. This bias is exacerbated by the fact that they used only the 1979–1984 NLSY interviews, so that the more-educated males were out of school a much shorter time in their study than in ours.

TABLE 1. LOGISTIC REGRESSION OF MARRYING IN A YEAR: BLACK AND WHITE MALES

	Blacks				Whites			
	1	2	3	4	1	2	3	4
Constant	–2.72	–2.49	–2.38	–4.35	–2.11	–1.98	–1.87	–3.32
Interview Year								
1975–1978	0.06	0.49*	0.68**	0.97***	–0.32**	–0.07	0.41*	0.50**
1979	0.13	0.17	0.18	0.18	0.16	0.15	0.15	0.15
1980	–0.04	–0.05	–0.04	–0.05	0.04	0.05	0.04	0.03
1981	0.14	0.12	0.14	0.15	–0.06	–0.05	–0.04	–0.04
1982	—	—	—	—	—	—	—	—
1983	0.04	0.08	0.08	0.09	–0.10	–0.10	–0.09	–0.10
1984	–0.02	–0.05	–0.04	–0.03	0.07	0.05	0.05	0.06
1985	0.21	0.17	0.17	0.17	0.06	0.04	0.03	0.03
1986	0.37*	0.31	0.30	0.30	0.21*	0.19	0.18	0.18
1987	0.40**	0.33	0.32	0.32	0.40***	0.37***	0.36***	0.33***
1988	–0.10	–0.14	–0.16	–0.19	–0.18	–0.21	–0.23	–0.24
1989	–0.12	–0.17	–0.20	–0.20	–0.09	–0.12	–0.14	–0.16
No Interview	–0.00	–0.08	–0.19	–0.23	0.45***	0.40***	0.28*	0.24
Years Out of School								
In School	–1.14***	–0.91***	–0.77***	–0.64***	–1.31***	–1.18***	–1.04***	–0.93***
< 1	–0.38**	–0.33*	–0.24	–0.15	–0.40***	–0.36***	–0.25**	–0.19*
1	–0.33**	–0.32*	–0.31*	–0.28*	–0.07	–0.06	–0.03	–0.01
2	—	—	—	—	—	—	—	—
3	0.08	0.08	0.08	0.06	0.20*	0.18*	0.18	0.16
4	0.06	0.08	0.07	0.02	0.03	0.03	0.01	–0.15
5–7	–0.07	–0.05	–0.06	–0.10	0.09	0.09	0.08	0.04
7+	0.18	0.08	–0.06	0.01	–0.02	–0.03	–0.05	–0.09
School Break	0.12	0.13	0.12	0.08	0.26***	0.24***	0.21***	0.18**
Education (Years)								
0–11	–0.60***	–0.40***	–0.36***	–0.25**	–0.07	0.05	0.12	0.21**
12	—	—	—	—	—	—	—	—
13–15	0.34***	0.33***	0.33***	0.26**	0.27***	0.28***	0.27***	0.23***
16+	0.79***	0.67***	0.64***	0.49***	0.28***	0.22**	0.20**	0.14
Job Type								
Not employed		–0.94***	–0.64***	–0.51***		–0.55***	–0.24***	–0.17*
Stopgap		–0.33***	–0.26**	–0.20*		–0.31***	–0.23***	–0.20***
Military		0.48***	0.38**	0.39**		0.25**	0.25*	0.29**
CA/CE		—	—	—		—	—	—
Weeks/Hours Worked								
None			–0.70***	0.20			–1.04***	–0.63***
PT (PY or FY)			–0.55***	–0.30*			–0.44***	–0.29***
FT (PY)			–0.24**	–0.10			–0.41***	–0.31***
FT/FY			—	—			—	—
Log Earnings				0.21***				0.15***
No Earnings				–1.37***				–0.65***
–2 Log-Likelihood	4,700***	4,610***	4,590***	4,557***	10,049***	9,988***	9,933***	9,911***
df	12,813	12,809	12,805	12,802	18,188	18,184	18,180	18,177

***$p < .01$; **$p < .05$; *$p < .10$

stopgap jobs depressed marriage probabilities. Even so, the coefficient remained significant, albeit at only the 10% level for blacks, probably because of smaller sample size given that the coefficients for blacks and whites were identical.

When we turn to the effect of work experience during the entire previous interview year, there are apparently contrasting results for the two racial groups, although these may be partly due to disparities in sample size. For whites, anything less than FT/FY employment had a strong negative effect on marriage formation, but the addition of earnings reduced this effect somewhat. For blacks, on the other hand, part-time employment, compared to FT/FY employment, had a significantly negative effect on marriage odds while full-time/part-year employment did not. This finding supports our hypothesis that, at least for blacks, part-time employment is a much more serious indicator of labor-market instability. The negative impact of part-year employment for blacks was accounted for by low earnings, however. The black/white differences in the effect of "no weeks worked" and FT/PY employment were significantly different in the interaction analysis. These variables, however, operated to reduce the negative effect of less than FT/FY employment for blacks.[9]

The earnings variable was an important reason for the positive impact of employment variables on marriage formation, but earnings itself had a robust net positive effect for both groups. Any differences between blacks and whites were insignificant when tested for interactions in a pooled regression model. Because median earnings almost quadrupled for blacks and tripled for whites between being out of school less than a year and being out 10 or more years, the effect of earnings was fairly substantial.

So far, we have not commented on the effect of "no work" (in an interview year) and "no earnings" (in a calendar year) on marriage formation. There is no doubt that not working throughout the year, and hence not having any earnings, greatly reduces the log-odds of marrying in the next year. When either one of these variables is in the equation without the other, its effect is large and negative. These are the only two variables in the analysis, however, that by definition have a multicollinearity problem: The correlation between them is .80 for both blacks and whites. In fact, the correlation would have been perfect, but earnings were measured in the previous calendar year while work experience referred to the previous interview year.[10] Therefore we do not attach much meaning to the fact that the effect of no earnings "won" out over the effect of no work experience for blacks, whereas both remained significant and similar in impact for whites. In either case, summing up these various coefficients shows that the odds of marrying are very low for those in such an extremely weak labor-market position. For blacks, the odds for those who were not working at the previous interview or during the previous interview year and who had no earnings were only 15% of those who were FT/FY career workers with earnings at the mean. The comparable odds for whites were somewhat higher but still very low—23%.

In sum, all the career-cycle and economic status variables proved important predictors of marriage formation and, even though interrelated, most were still significant when the remaining variables were included in the equation.[11] Nevertheless, it is clear that both work experience and earnings are major reasons why stopgap employment depresses marriage odds, and earnings is certainly critical in explaining the negative impact of low work experience on marriage formation. That the effects of job type and work experience retained a significant net effect in Model 4, however, indicates the independent importance of employment stability and stopgap employment aside from their earnings implications. Moreover, these explanatory variables often tend to form a package—low education, stopgap employment, part-time and/or part-year work, and low earnings tend to go together, whereas more education, career employment, year-round/full-time work, and higher earnings go together. Thus their combined effect on marriage timing is substantial. We also found that, although the work-related variables had large effects for both blacks and whites, there were also important differences between the two groups. The much greater effect of educational attainment for blacks is particularly noteworthy because this is the major variable predicting long-run labor-market position, and there are still big differences in the schooling distributions of the two racial groups. Not being employed also had a much greater negative effect for blacks. On the other hand, FT/PY employment was less of a deterrent to marriage formation for blacks, net of earnings. Not working at all in the year was also less of a deterrent but this finding is suspect given the multicollinearity problems with the "no earnings" variable.[12]

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9. We find little evidence that there is a multicollinearity problem between the job type and yearly work experience variables. For example, the highest bivariate correlation was found between those who were not employed at the previous interview and those who had not worked at all the previous year: $r = .62$ for blacks and $r = .58$ for whites. The next highest was the relationship between no employment at the previous interview and full-time/full-year employment: $r = -.52$ for blacks and $r = -.54$ for whites. Despite our having varied these models and changed the input variables in a variety of ways, our findings have proven to be highly robust.

10. The correlation of not working at the previous interview with no earnings during the previous year is not very high—.53 for whites and .55 for blacks. Moreover, the coefficients are quite stable across models, indicating that multicollinearity is probably not a serious issue in this case.

11. We also conducted a sensitivity analysis on the robustness of our results by reestimating the model using the so-called "Huber's correction" for the dependence among the observations (StataCorp 1995:456–65; White 1980). The results closely match those we report here.

12. The use of only one-year measures of the work variables (job type and yearly work experience) in the regression analyses raises the possibility of a reversal in causal direction: Young men planning to marry in the near future finally "settle down" to a regular job. Although this will certainly be the case for some young men in the sample, we do not believe that this causal direction drives our findings. We explored this issue, however, and found that, compared to other work experience combinations, FT/FY employment for two years consecutively had a strong positive effect on marriage formation. Further, the high proportion of those exhibiting a very weak labor-market and earnings position—particularly if they are poorly educated—makes it seem unreasonable to attribute this to a weak desire to marry.

THE CAREER-ENTRY PROCESS AND MARRIAGE TIMING

The regression coefficients we have reported refer to the effect of career and economic position on marriage formation in any given interview year. However, it is not just the negative effect of economic difficulties in any *single* year that is at issue but how long such difficulties persist. If the transition to a stable adult work career is a multi-year process, then only by looking at the *cumulative* impact of these career-status variables over the young adult life course can we fully appreciate the magnitude of their effect on marriage timing. To illustrate this cumulative impact, we have developed rough estimates of how marriage timing might vary among men with very different types of career-entry patterns. We first developed models of easier versus a more difficult career-entry transitions. Then, using the applicable regression coefficients and life-table techniques, we calculated the predicted survival curves for men undergoing easy versus difficult transitions. Our goal was partly to shed light on whether the difficulty of the career-entry process predicts large differences in the speed of marriage formation for these late-marrying NLSY cohorts. We also wanted to assess whether career-entry problems might represent a potentially important factor in the rising age at marriage over the past 25 years, given the rapid deterioration in young men's labor-market position during this period. If the differences, by career-entry difficulty, are relatively large for the NLSY cohorts, then the declining relative economic position of young men is a potentially important factor in marriage trends. We cannot go beyond that interpretation with a historically limited data set such as the NLSY.

The growth of economic inequality due to the deteriorating labor-market position of younger compared to older workers is not the only way in which inequality has been rising since the 1970s, of course. As discussed earlier, the economic position of moderately to less-educated young men—particularly of blacks—has been severely affected, suggesting that race and schooling are important indicators of the ease or difficulty of young men's career development process. Even within educational groups there is evidence of increasing inequality (Juhn et al. 1993). Thus rather than examining the marriage timing of men undergoing difficult versus easy transitions only in the sample as a whole, we developed projections specific to the four schooling groups distinguished in the analysis and for blacks and whites separately—eight race/schooling groups in all. This makes possible both within- and between-group comparisons of the implications of different career transition types and directly illustrates the marriage-timing implications of recent trends in economic inequality.

Socioeconomic Inequalities in the Career-Entry Process

Rather than arbitrarily defining standards of difficult versus easy transitions, we partly derived these from the career-entry patterns actually exhibited by each race/education group in the sample. Hence we begin with a brief description of the group variations in the nature of career development. These variations document the basis of our career-entry models and reveal the enormous intergroup and intragroup inequalities in the speed and difficulty of the career-entry process.

We used quite detailed patterns of the cohorts' earnings, work experience, and job type by educational attainment and year out of school as models for defining the career-entry types. Space limitations prevent our presenting these data in the same detail here, but a summary of the salient features of these patterns is provided in Tables 2 and 3. For each race/education group, the top two panels of Table 2 show how much time out of school it took for increasing proportions of the cohorts to be working full-time/full-year for one year (the left panel) and for two consecutive years (the right panel). The bottom two panels present the comparable data for working in a career or career-entry job (hereafter referred to as a career job). The comparisons are for all young men, regardless of marital status, and hence will probably exaggerate the economic position of single men.

Four major findings about race/education differences in the speed and success of the transition to these two measures of career status can be gleaned from the table. First, success in achieving either FT/FY employment or a career job by 1990 increased substantially with educational attainment for both blacks and whites. For example, despite our relaxed definition of full-year employment (working at least 85% of the weeks since the last interview), by the end of the observation period less than 70% of white dropouts ever worked FT/FY for one year and less than 50% of them worked FT/FY for two years consecutively. On the other hand, over 90% of white college graduates achieved FT/FY employment.

Second, the speed of the transition was much greater for the more educated. It took seven years for 40% of black dropouts to be working FT/FY for one year, and this level was never achieved for two years consecutively. Hence for a considerable length of time, high proportions of these men were at a consistently or periodically low risk of marrying. On the other hand, 70% of black college graduates were working FT/FY by their first full year out of school; it took this group only three years to achieve this proportion for two years consecutively. Slower transitions were not limited to high school dropouts but were experienced by high school graduates and those with some college. A similar pattern was observed for the progression to career jobs.

Third, comparing the one-year with the two-year data, there were frequent career reversals during individuals' transitions to a stable work career. This is indicated by the amount of short-term backsliding that must have occurred to produce the large disparities between the one- and two-year performance measures. Moreover, these figures represent net as opposed to gross flows. Thus the career development process is often relatively messy, suggesting that the timing of the first full-time job may be a less significant transition point than is often thought in life-course or social mobility research. Moreover, the time difference is strongly and in-

TABLE 2. YEARS OUT OF SCHOOL TAKEN TO REACH SELECTED PERCENTAGES WORKING FULL-TIME FULL-YEAR OR AT A CAREER JOB: WHITE AND BLACK MALES, BY EDUCATION

A. Percentage Working Full-Time Full-Year

Selected Percentages Working FT/FY	FT/FY for One Year				FT/FY for Two Consecutive Years			
	Education (Years)				Education (Years)			
	0–11	12	13–15	16+	0–11	12	13–15	16+
Whites								
30	2	< 1	< 1	< 1	3	2	1	1
40	2	1	< 1	< 1	7	2	1	2
50	4	1	< 1	1	—[a]	4	2	2
60	8	2	1	1		6	3	2
70	—[a]	5	2	1		10	4	2
80		10	4	1		—[a]	—[a]	3
90		—[a]	—[a]	3				—[b]
Blacks								
30	3	1	< 1	< 1	8	3	2	1
40	7	1	1	< 1	—[a]	6	2	2
50	—[a]	2	1	1		10	4	2
60		6	2	1		—[a]	8	2
70		—[a]	6	1			—[a]	3
80			—[a]	4				—[b]
90				—[b]				

B. Percentage in a Career Job

Selected Percentages in Career Jobs	Career Job for One Year				Career Job for Two Consecutive Years			
	Education (Years)				Education (Years)			
	0–11	12	13–15	16+	0–11	12	13–15	16+
Whites								
30	< 1	< 1	< 1	< 1	3	1	< 1	< 1
40	2	< 1	< 1	< 1	7	2	1	1
50	3	< 1	< 1	< 1	8	3	1	1
60	8	2	< 1	< 1	—[a]	7	3	1
70	—[a]	6	2	< 1		—[a]	5	2
80		—[a]	5	1			—[a]	2
90			—[a]	2				—[a]
Blacks								
30	3	< 1	< 1	< 1	—[a]	2	1	< 1
40	—[a]	< 1	< 1	< 1		10	2	1
50		4	< 1	< 1		—[a]	4	1
60		—[a]	2	< 1			—[b]	2
70			—[b]	< 1				3
80				2				—[b]
90				—[b]				

Note: Those in the military are combined with those in career/career-entry jobs.

[a]This proportion not yet reached by the end of the observation period.

[b]Not available; the sample size was too small for this time out of school. Not all of the more-educated cohorts have been out of school long enough.

versely related to educational attainment so that the transition to FT/FY employment is less likely to be reversed from one year to another for those with more schooling—especially in the case of the college educated.

Finally, for each educational group through those with 1–3 years of college, blacks took much longer than whites to achieve any given proportion working FT/FY; the proportion of blacks working FT/FY was never as high as that for whites. Black high school dropouts were particularly disadvantaged but the pace and success of the transition to FT/FY employment were also much worse for black high school graduates and those with some college. The same pattern exists for career jobs.

Group differences in earnings patterns over the early career cycle parallel those of the work experience and job type patterns. Table 3 shows the ratios of the first two earnings quartiles to the poverty threshold for a couple with two children as an indicator of differences in the extent to which a young man's earnings are barely adequate for supporting a small family. The ratios are presented by race, schooling, and years out of school and are limited to those with some earnings during a calendar year so that intergroup differences in year-long nonemployment will not drive comparisons of the patterns. Of course, men in higher socioeconomic groups are unlikely to use poverty lines to assess their income adequacy, and these thresholds themselves are probably woefully inadequate to serve as a standard even for lower socioeconomic groups (Smith 1988). They do, however, represent a kind of minimum income level for supporting family life and as such can be helpful in assessing the significance of differences and changes in earnings over the young adult life-course.

The economic consequences of race/education differences in labor-market position are well illustrated in the patterns of earnings over the first nine years out of school. Throughout this period, both white and black high school dropouts exhibited extremely low earnings, especially for blacks. In neither group did the first quartile earnings ever equal the poverty threshold, and white dropouts' median earnings only barely exceeded the threshold by their seventh year out. The ratios rise with schooling levels but first quartile earnings remained very close to the poverty line even for those with some college. Whatever the schooling level, the black earnings ratios were well below those of whites. In fact, the median ratios for blacks with a high school degree resembled those of white dropouts, and those for blacks with some college were close to those of white high school graduates.

In sum, these findings show that career transitions are more successful and much faster for the more educated compared to the less educated and for whites compared to blacks at similar schooling levels. Transition difficulties were not limited to the lowest educational group—high school dropouts—but were also apparent for the largest single schooling group—high school graduates. This was even true for blacks with some college experience who also exhibited considerable labor-market instability.

Career-Entry Difficulties and Marriage Formation

Our goal in producing predicted survival curves is to show that, even assuming constancy among educational groups in the effect of a man's career status on marriage formation in any given year, large schooling differences in marriage timing can occur because of educational differences in the speed and difficulty of the career transition.[13] Our models of difficult versus easy transitions are based on certain conceptually defined guidelines supplemented by the behavior patterns described earlier for those with no schooling break in the different race/schooling groups. For theoretical reasons, we usually define a relatively mature career as one characterized by FT/FY employment at a career or career-entry position. Someone undergoing an easy transition will move rapidly into a mature career once out of school. On the other hand, those undergoing a more difficult transition are likely to exhibit a more unstable labor-market attachment for several years. Here, however, there are several options. In the case of the work experience variable, for example, these options include no work in a year, part-time work only, or full-time/part-year employment. In this case, observed behavior can provide a more accurate guide than a purely arbitrary decision. In addition, rather than relying on a few extreme observations to define a difficult transition, we set a minimum proportion of between 20%–25% at an equal or lower level of employment in any given year to qualify as an indicator of a difficult transition. For example, for every year out of school, over 30% of black high school dropouts were either part-time workers or not employed at all during the previous year. Because people are more likely to bounce back and forth between nonemployment and marginal employment rather than to remain permanently nonemployed, we tried to be conservative in our approach by using part-time employment rather than nonemployment as the model of a difficult transition. On the other hand, less than 10% of black college graduates worked this little once out of school one or more years. Thus part-time employment was not considered characteristic of enough graduates to represent a sufficiently common difficult transition for this educational group. Hence for college graduates, the main source of differences in marriage timing between the easier and more difficult transitions was earnings differences. In addition, the 20% criterion for a difficult transition might be met for only the first few years out of school. Thus the difficult transition for white high school dropouts was defined as part-time employment for up to two years out of school and full-time/part-year employment thereafter. In these ways, difficult transitions varied considerably across groups because some experienced persistent job instability, whereas others experienced relatively rare or only brief job

13. Based on the career-entry behavior and characteristics of all education groups combined, we also set up models of difficult versus easier transitions for all blacks and whites separately, assuming the average educational level—12 years of schooling. The resulting predicted probabilities of marriage, however, were so similar to those based on the career-entry patterns specific to high school graduates that we have not reported them separately.

TABLE 3. QUARTILE 1 AND MEDIAN EARNINGS AS A RATIO OF THE POVERTY LINE FOR A COUPLE WITH TWO CHILDREN, BY YEARS OUT OF SCHOOL AND EDUCATION: WHITE AND BLACK MALES

Years Out of School	Whites				Blacks			
	Education (Years)				Education (Years)			
	< 12	12	13–15	16+	< 12	12	13–15	16+
Quartile 1								
1	0.21	0.54	0.82	1.10	0.12	0.22	0.41	0.98
2	0.32	0.68	0.93	1.53	0.15	0.36	0.69	1.24
3	0.36	0.77	1.08	1.67	0.15	0.40	0.87	1.51
4	0.37	0.89	1.19	1.83	0.21	0.47	0.93	1.52
5	0.45	0.90	1.23	1.91	0.23	0.54	0.91	—[a]
6	0.46	0.93	1.27	2.07	0.23	0.56	1.04	
7	0.55	1.04	1.24	1.95	0.27	0.75	0.83	
8	0.69	1.10	1.50	—[a]	0.29	0.69	—[a]	
9	0.68	1.11	1.30		0.36	0.78		
10+	0.80	1.26	1.44		0.42	0.80		
Median								
1	0.56	0.88	1.28	1.67	0.36	0.62	0.81	1.44
2	0.67	1.01	1.43	2.06	0.40	0.77	1.04	1.71
3	0.77	1.15	1.50	2.23	0.42	0.82	1.19	2.00
4	0.85	1.26	1.65	2.39	0.57	0.90	1.27	2.08
5	0.97	1.31	1.75	2.52	0.61	0.95	1.35	—[a]
6	1.01	1.39	1.80	2.75	0.64	1.04	1.47	
7	1.04	1.51	1.83	2.58	0.68	1.11	1.62	
8	1.19	1.59	2.07	—[a]	0.69	1.25	—[a]	
9	1.19	1.67	2.08		0.81	1.17		
10+	1.25	1.83	2.11		0.81	1.30		

Note: Poverty line for a couple with two children is $12,575 in 1989 dollars.

[a]Not available; sample size too small for this time out of school.

instability. In the case of earnings, we used the observed third quartile (Q_3) earnings, specific to each race/education group and year out of school, as the model for those undergoing a easier and/or more successful transition. We used the first quartile (Q_1) earnings for those undergoing a more difficult and/or less successful transition. In sum, a difficult transition was not defined absolutely because this made little empirical sense; instead it was defined relative to the pertinent race/education group. It is the *combined* effect of all these indicators of labor-market inequality on marriage timing that we want to estimate.

Although the estimates are generally limited to two options—a difficult versus an easy transition for each race/education group—there is one exception to this rule. For both black and white high school graduates and for blacks with some college, military service provided a relatively important option during the early career cycle. Moreover, those in the military were much more likely to marry in a year. For example, a high of 27% of employed black graduates out of school for one year (vs. 12% of white graduates) were in the military; and 16% of blacks (vs. 7% of whites) with 1–3 years of college who were out of school two years were in the military. For these groups an additional set of predicted probabilities were estimated for men serving during the first four full years out of school to provide some indication of how much military service was associated with a younger age at marriage. We used the easy transition to build on as the military usually try to screen out the least promising applicants who are also the most likely to be having a particularly difficult transition.[14]

Because we have kept our regression models rather simple to make the prediction process more manageable, the absolute values of the predicted probabilities are probably sometimes unrealistic, given the numerous other unmeasured factors that will influence marriage formation. For this reason, it is more meaningful to compare difficult with easy transitions, and educational and racial groups rather

14. The details on how the easier and more difficult transitions were defined can be obtained from the corresponding author upon request.

than to concentrate on the absolute levels of the predictions. The absolute values, however, do not vary much from the observed values.

The predicted proportions ever married by year out of school are presented in Figure 3. For blacks, each educational group exhibited substantial differences in predicted marriage patterns between those experiencing a difficult transition and those experiencing an easy transition. The disparity was especially large for high school dropouts. In general, except for those with 16 or more years of schooling, the difference is 20 percentage points or more once they are out of school 10 years or more. Compared to blacks with an easier transition but no military service, a greater proportion of black high school graduates and those with some college who served in the military were ever married—a difference of about 11 percentage points for both by the time they were out of school five or more years. Whites also exhibit large differences in the predicted percentages ever married according to the difficulty of the career transition. These differences are not as great as those for blacks and are primarily limited to those with a high school education or less—almost half of NLSY white males at age 25. For whites too, military service increased the predicted proportions ever married. In sum, the strong effect of these young men's labor-market characteristics on marriage formation in any given year, combined with their frequently poor labor-market position during the early work career, produced very large predicted differences in the pace of marriage formation for those experiencing easier versus more difficult career transitions. These differences increased substantially as educational attainment declined.

Finally, Figure 3 indicates that regardless of the educational group, the difficulty of the career transition, and year out of school, the predicted proportions ever married were much greater for whites than for blacks. For each schooling group, however, black/white differences were the greatest for those having a difficult transition and much less for those having an easier transition. For example, for men with 1–3 years of college and seven years out of school, the difference was 28 percentage points for the difficult transition but only 7 percentage points for the easy transition combined with military service. Moreover, the black/white differences for easier transitions decreased with increasing education levels; for those out of school four years, it declined from 27 points for dropouts to 2 points for those with sixteen or more years of schooling. The small differences for the college educated is all the more impressive when one considers how much larger the black intercept is than the white intercept (–4.35 vs. –3.32).

In sum, the simulations in Figure 3 show that the difficulty of career transitions had a large impact on marriage timing and that the size of the impact varied substantially across race and schooling groups. These results are a function of the two components we used to estimate the effect of career-entry problems on marriage timing. First, the regression analyses revealed that in any given year, indicators of career immaturity and low earnings had a substantial negative impact on marriage formation for both blacks and whites. Most previous research has stopped at this point. By comparing the persistence of career-entry difficulties within and between groups, however, we have been able to show a second essential component: the pattern of changes in career status over the young adult lifecourse for each race/schooling group.

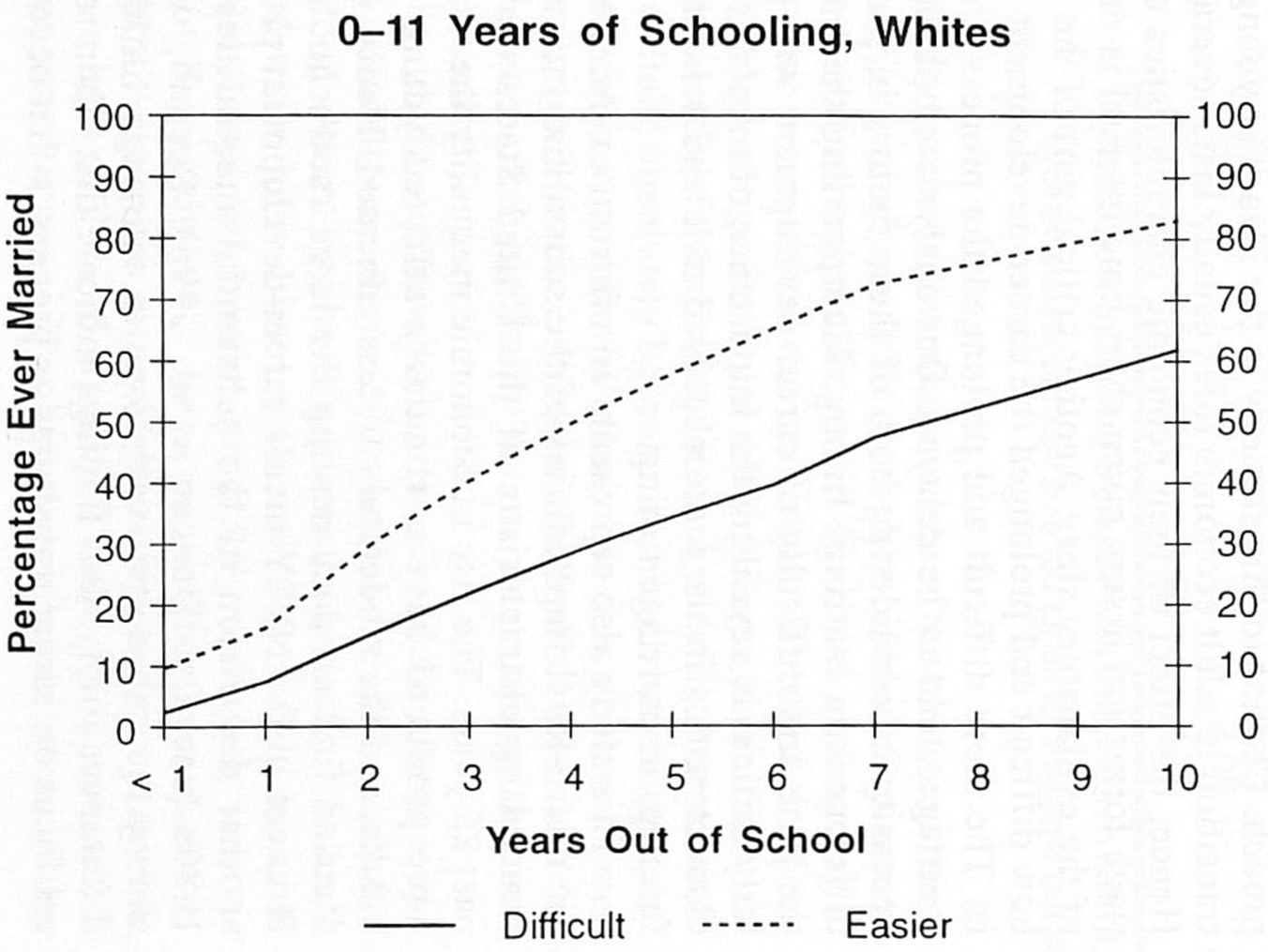
Although the effects of several of the explanatory variables were significantly different for blacks and whites, especially the education effect, we doubt that these differences alone played a decisive role in the enormous black/white differences in marriage timing. What is important is that economic factors have a substantial effect for both groups and that their impact is amplified by the marked black/white differences in the pace and difficulty of the career-entry process. Similarly, if changes in men's economic positions prove to be a major factor in changes in marriage timing, it probably will not be due primarily to changes in the impact of work characteristics on marriage formation per se. Instead it is more likely to result from changes in the nature of the career-entry process, which have placed increasing proportions of young men into economic circumstances—and for longer periods—where the risk of marriage is relatively low. Finally, we have not defined difficult and easy transitions according to the extremes of the distributions; we have defined them much more conservatively. Hence, we will be understating rather than overstating the substantial negative impact of career-entry inequalities on marriage formation.

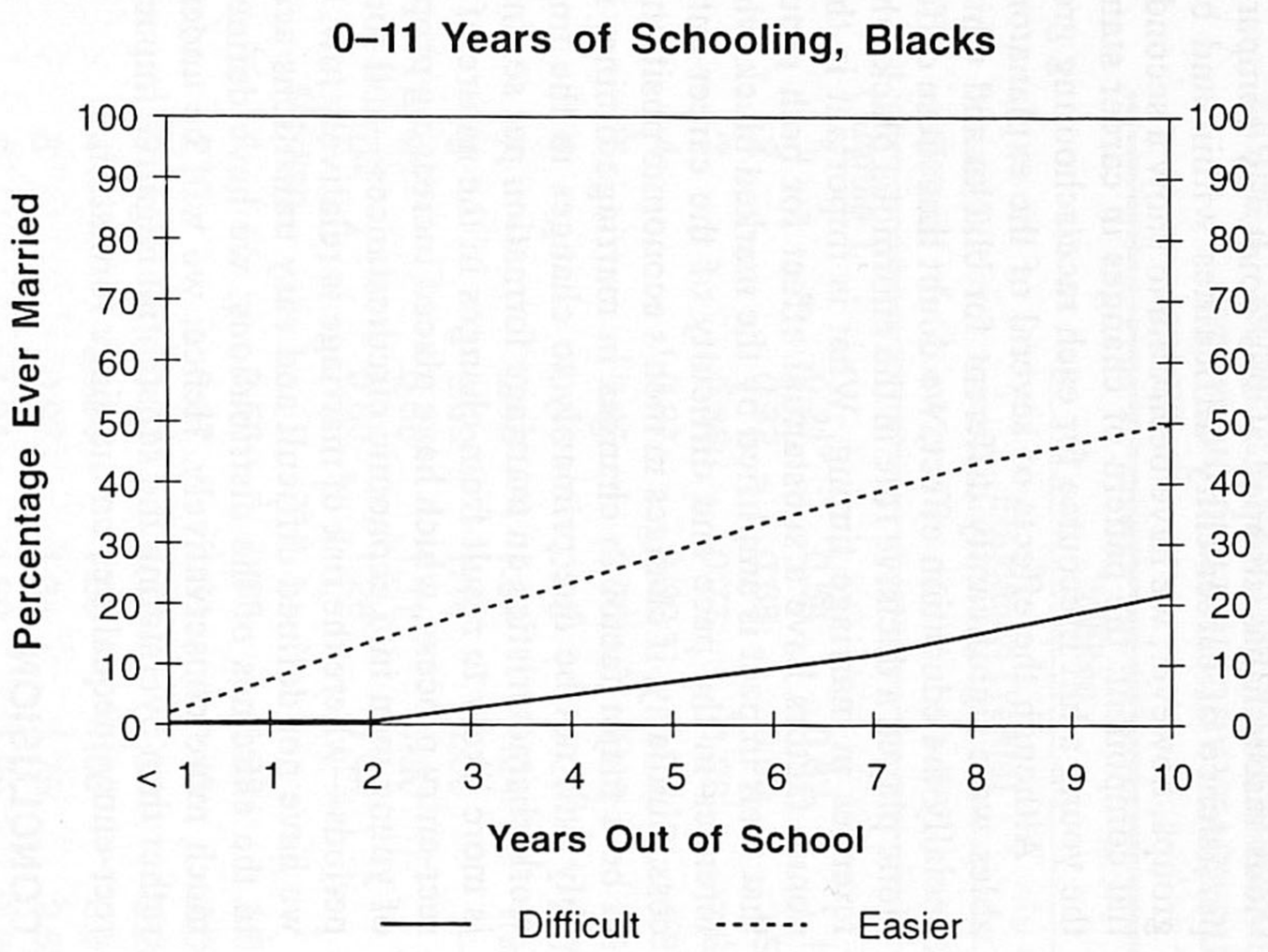
CONCLUSION

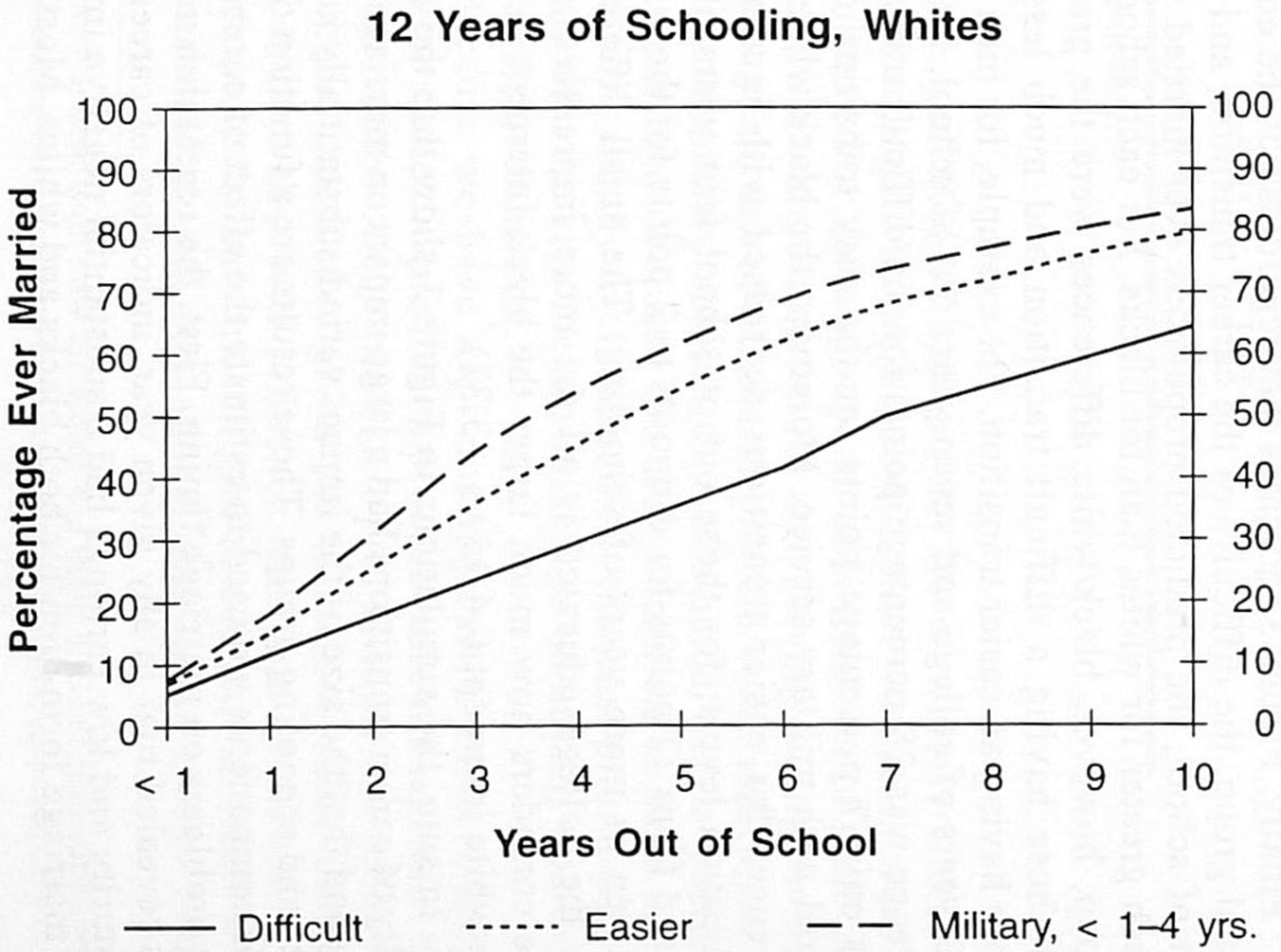
We have investigated the effect of young men's economic position on marriage timing by taking a career-cycle approach. Central to this strategy is the idea that young men's transition to adult economic roles usually lasts several years. Hence, the effect of their economic characteristics on marriage formation in any given short time interval is only part of the explanatory story. Another critical part of the story is how difficult and prolonged the career-development process is: The more difficult and prolonged the process, the more marriages tend to be delayed. Our analysis emphasizes the necessity of considering both of these factors in predicting differences in marriage timing. Incorporating the impact of the pace and difficulty of career development was particularly critical in revealing the importance of men's economic characteristics in the large observed race and schooling differences in marriage timing.

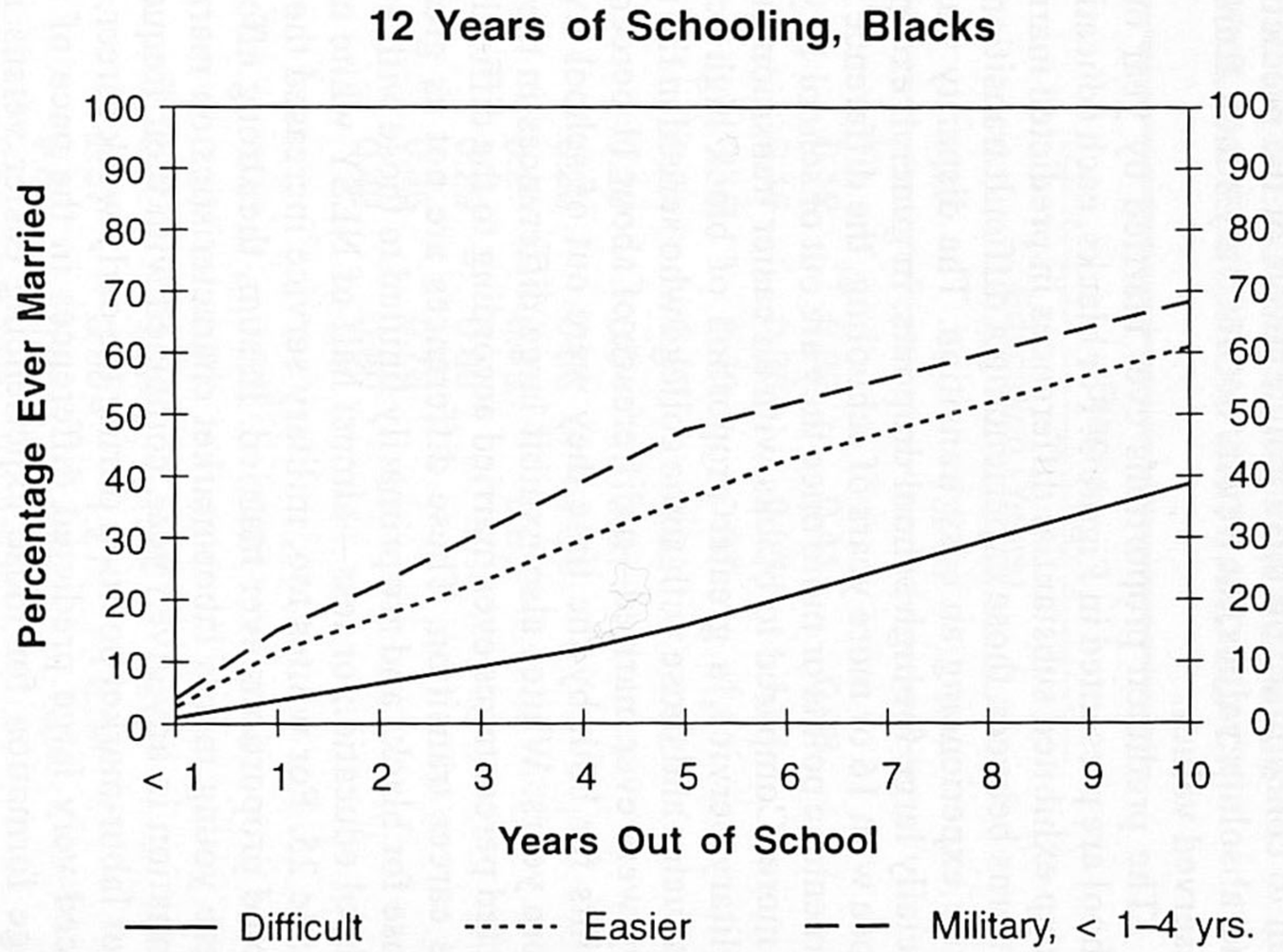
This study also represents an effort to examine some of the micro-level implications of the substantial industrial restructuring characteristic of the United States during the past 25 years. The rise in economic inequality these changes have produced have particularly affected young people, blacks, and the moderately to less educated. Hence we have focused first on documenting the large race/schooling differences in the NLSY men's career-development process as another dimension of the substantial inequalities of the 1980s (see also Duncan et al. 1996). Second, we have shown the substantial variations in marriage timing these differences imply. Our findings indicate that when researchers focus on career transitions as processes that occur over a

FIGURE 3. PREDICTED PROPORTIONS EVER-MARRIED, BY DIFFICULTY OF CAREER TRANSITION, RACE, EDUCATION, AND YEARS OUT OF SCHOOL

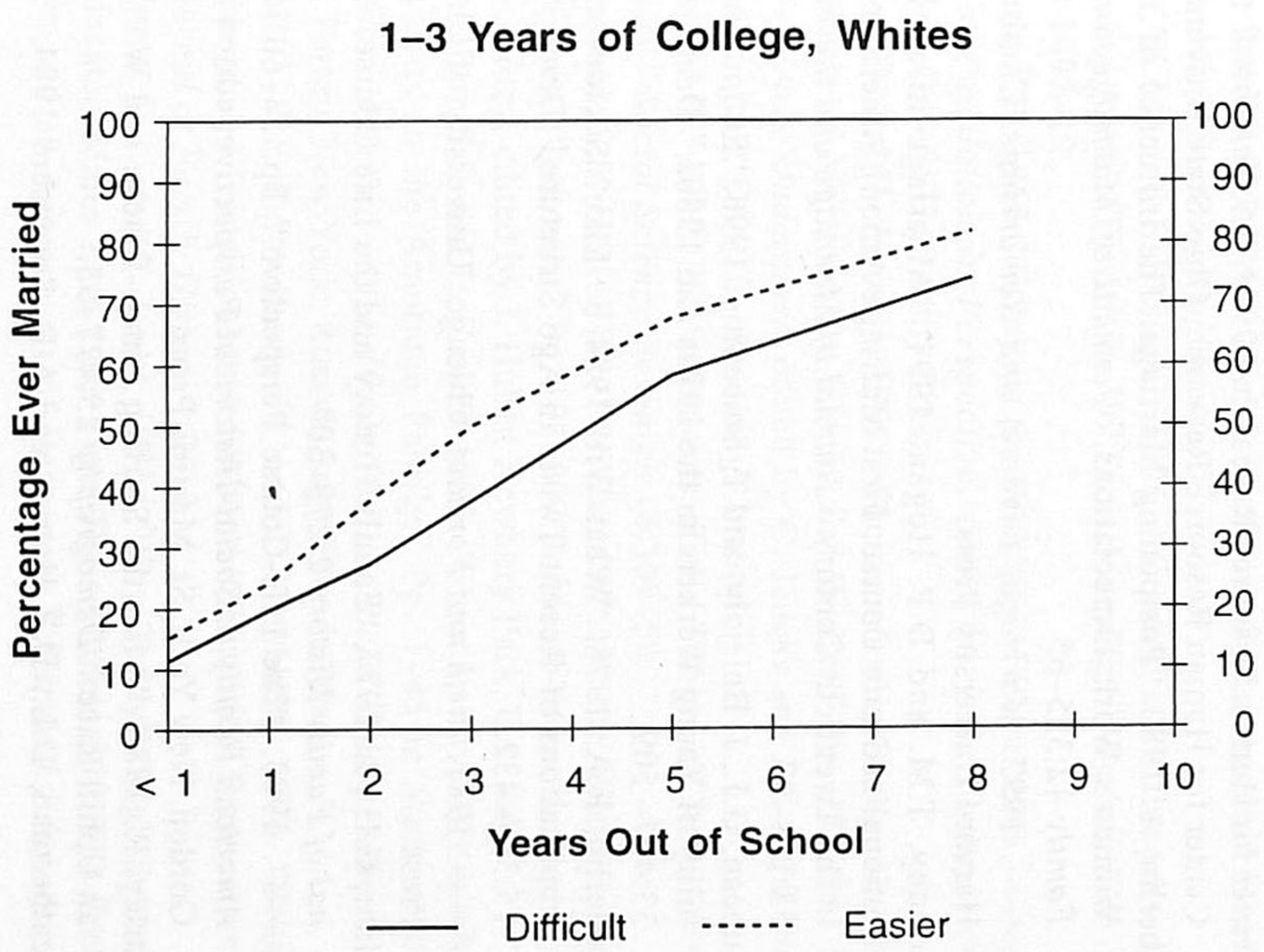


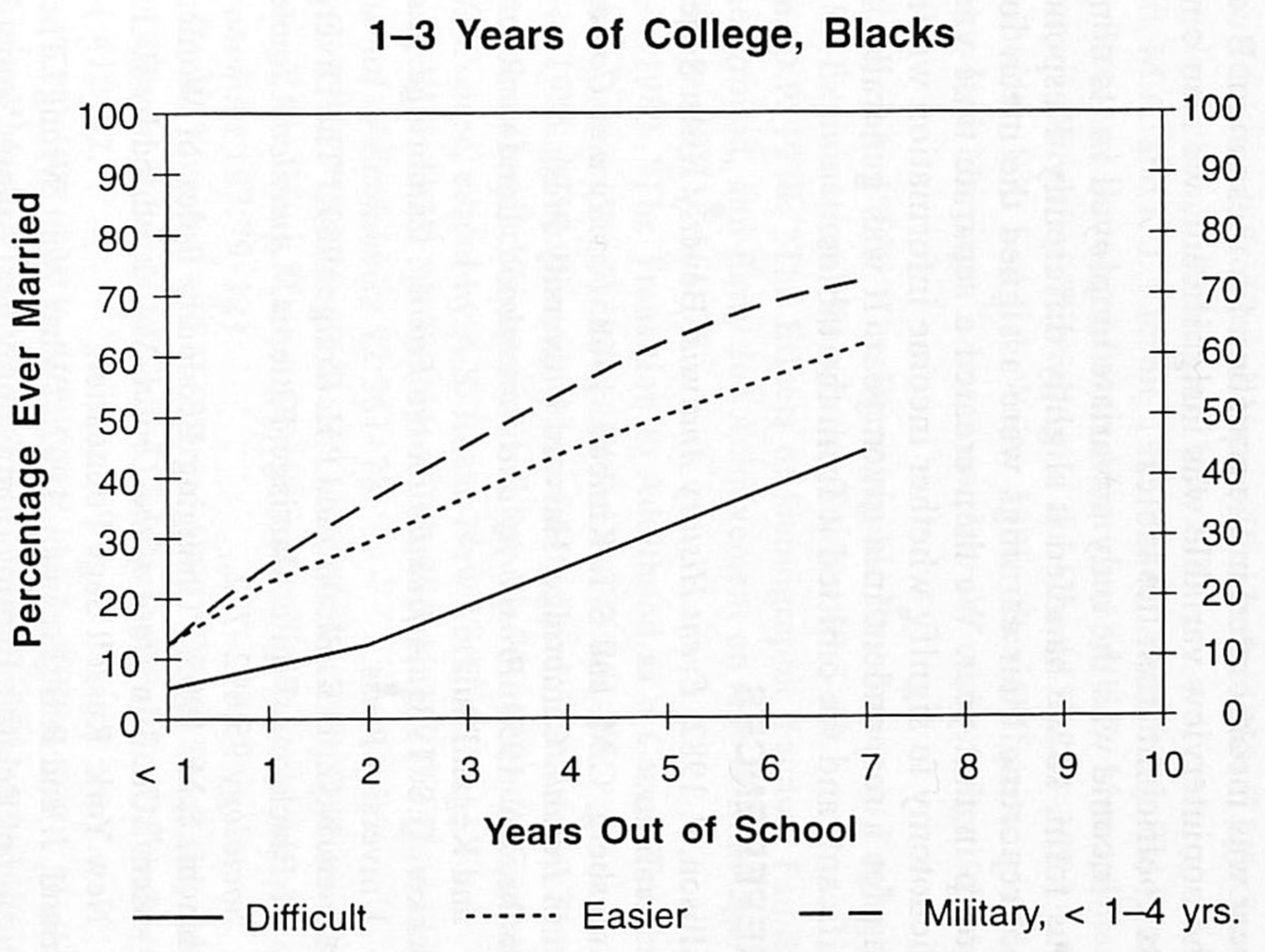


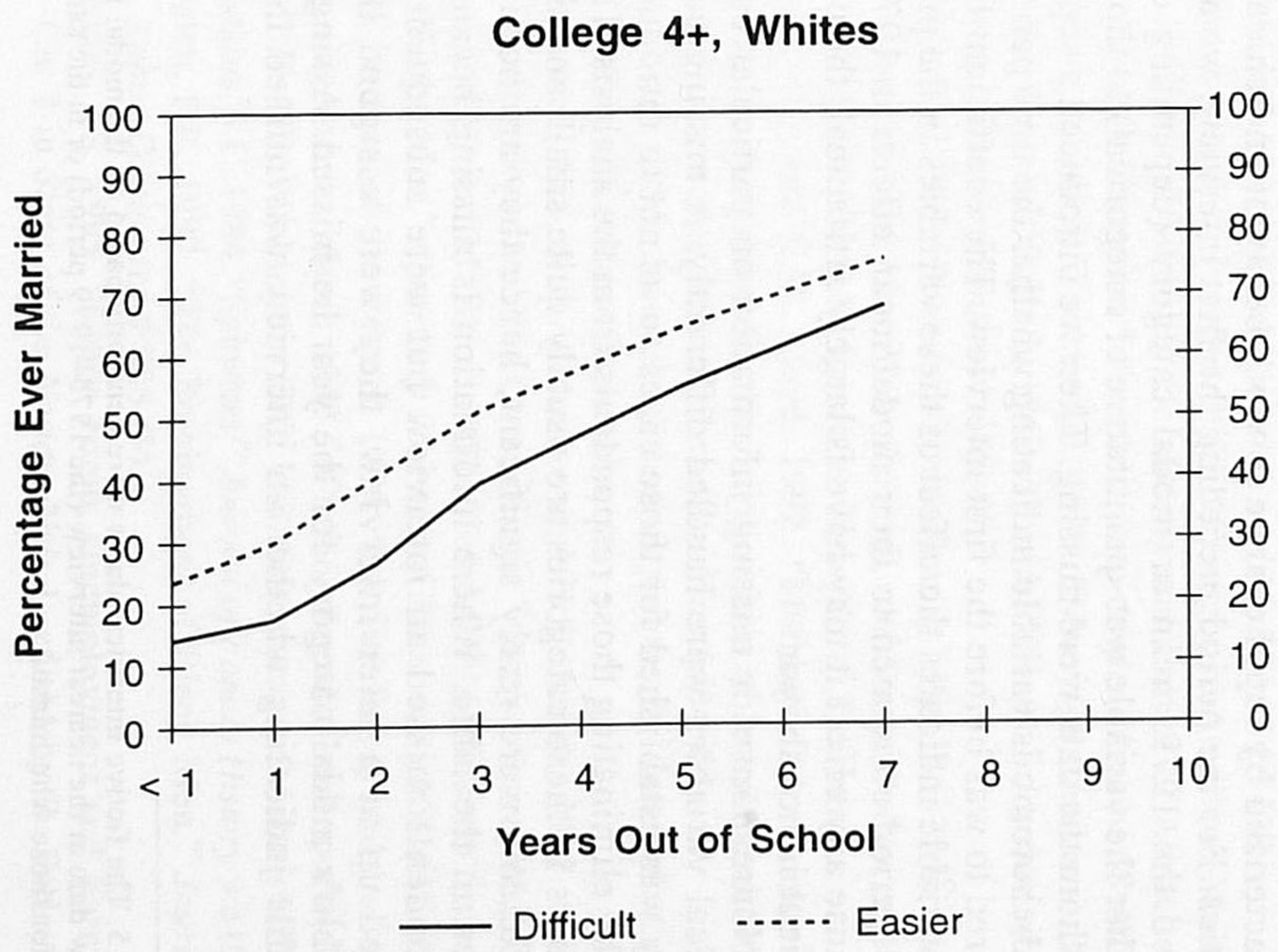


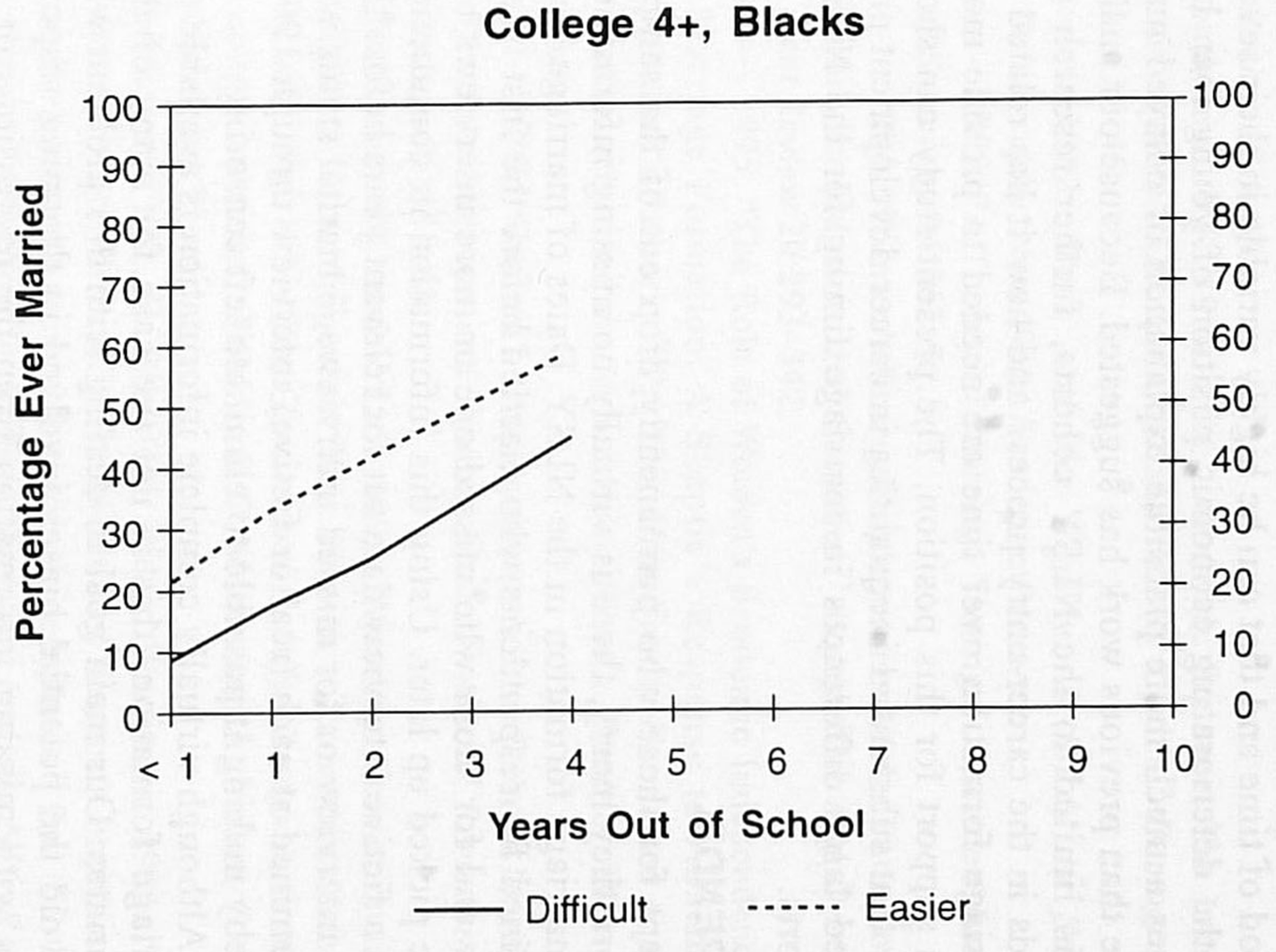


(FIGURE 3, CONTINUED)









period of time and that can be highly variable in their severity, the deteriorating economic position of young men becomes a much more plausible explanation of delayed marriage than previous work has suggested. Because our analysis is limited to the NLSY cohorts, further research on trends in the career-entry process and how it has related to marriage formation over time are needed to provide more firm support for this position. The present study can show only that substantial inequalities in career development predicted large differences in marriage timing for the NLSY cohorts.

APPENDIX

Except for those who permanently drop out of the sample before they marry, there is virtually no missing information on marriage formation in the NLSY. Dates of marriage were obtained for respondents who married before the first interview and for those who missed one or more interviews but were picked up later. Using this information in conjunction with a fictive interview date set for relevant years before the first interview or for missed interviews,[15] marital status was determined at each (real or fictive) interview through 1990, thereby making it possible to eliminate left censoring.

Although virtually complete information is available on marriage formation, this is not the case for many of the covariates. Our main goal in dealing with this problem was to avoid the potential biases involved in dropping respondents with missing information from the regressions or in estimating values for them by some arbitrary procedure—especially one that assumes nothing is changing in this period characterized by rapid change in work behavior and characteristics. For the period preceding the first interview, we assigned the 1979 mean or modal category (depending on whether the variable was quantitative or categorical) to those for whom the data were missing. Then we introduced a separate dichotomous variable indicating whether the time period referred to was before the first interview. The coefficient for this variable indicates the effect of these variables in the pre-1979 period compared to their modal/mean effects in 1979. Because any effect it may have is largely artifactual, the coefficient is not shown.

Nonresponse or missing information on particular categorical variables were handled differently. A missing category was established for those cases so as not to introduce bias by eliminating those respondents from the analysis. The numbers in these categories are usually quite small, and the coefficients were rarely significant; hence they are not included in the table. Where information is missing because respondents missed an interview but were subsequently picked up at a later interview, they were assigned the variable's modal category for the year he missed. A single variable indicating whether an interview was missed that year was incorporated in the equation for these men. Because the noninterview variable was insignificant, we also omitted its coefficient from the tables.

Income was the only covariate employed in its continuous form, so we handled it slightly differently. Respondents not reporting their earnings were assigned the mean for the group in that year. We then created a separate time-varying dichotomy to signify whether income information was missing for a respondent in a given year. It was generally insignificant, and we omitted it from the tables.

15. The fictive interview dates were generally based on the modal interview date at the nearest interview (the 1975–1979 period) or in the same year (for those who missed an interview).

REFERENCES

Allison, P. 1982. *Event History Analysis*. Beverly Hills: Sage Publications.

Arensberg, C.M. and S.T. Kimball. 1968. *Family and Community in Ireland*. Cambridge: Harvard University Press.

Banks, J.A. 1954. *Prosperity and Parenthood*. London: Routledge and Kegan Paul.

Becker, G.S. 1981. *A Treatise on the Family*. Cambridge: Harvard University Press.

Bennett, N.G., D.E. Bloom, and P.H. Craig. 1989. "The Divergence of Black and White Marriage Patterns." *American Journal of Sociology* 95:692–722.

Bianchi, S.M. 1995. "Changing Economic Roles of Women and Men." Ch. 3 in *State of the Union*, Vol. 1, edited by R. Farley. New York: Russell Sage Foundation.

Bound, J. and R.B. Freeman. 1992. "What Went Wrong? The Erosion of Relative Earnings and Employment Among Young Black Men in the 1980s." *The Quarterly Journal of Economics*. 107:201–32.

Center for Human Resource Research. 1992. *NLS Handbook: 1992*. Center for Human Resource Research, Ohio State University.

Cherlin, A. 1980. "Postponing Marriage: The Influence of Young Women's Work Expectations." *Journal of Marriage and the Family* 42:355–65.

———. 1992. *Marriage, Divorce, and Remarriage*. Cambridge: Harvard University Press.

Cooney, T.M. and D.P. Hogan. 1991. "Marriage in an Institutionalized Life Course: First Marriage Among American Men in the Twentieth Century." *Journal of Marriage and the Family* 53:178–90.

Duncan, G.J., J. Boisjoly, and T. Smeeding. 1996. "Economic Mobility of Young Workers in the 1970s and 1980s." *Demography* 33:497– 509.

Easterlin, R.A. 1978. "What Will 1984 be Like? Socioeconomic Implications of Recent Twists in Age Structure." *Demography* 15:397–432.

———. 1987. *Birth and Fortune*. Chicago: University of Chicago Press.

Elder, G.H., Jr. 1977. "Family History and the Life Course." *Journal of Family History* 2:279–304.

———. 1983. "The Life-Course Perspective." Pp. 54–60 in *The American Family in Social-Historical Perspective*, edited by M. Gordon. New York: St. Martins Press.

Farley, R. 1988. "After the Starting Line—Blacks and Women in an Uphill Race." *Demography* 25:477–95.

Featherman, D.L., D.P. Hogan, and A.B. Sorensen. 1984. "Entry

Into Adulthood: Profiles of Young Men in the 1950s." *Life-Span Development and Behavior* 6:159–202.

Fossett, M.A. and K.J. Kiecolt. 1993. "Mate Availability and Family Structure Among African Americans in U.S. Metropolitan Areas." *Journal of Marriage and the Family* 55:288–302.

Goldscheider, F.K. and L.J. Waite. 1986. "Sex Differences in the Entry Into Marriage." *American Journal of Sociology* 92:91–109.

Goldstone, J.A. 1986. "The Demographic Revolution in England: A Re-Examination." *Population Studies* 49:5–33.

Hogan, D.P. 1978. "The Effects of Demographic Factors, Family Background, and Early Job Achievement on Age at Marriage." *Demography* 14:161–75.

———. 1980. "The Transition to Adulthood as a Career Contingency." *American Sociological Review* 45:261–76.

———. 1985. "The Demography of Life-Span Transitions: Temporal and Gender Comparisons." Pp. 65–78 in *Gender and the Life Course*, edited by A.S. Rossi. New York: Aldine.

Johnson, W.R. 1978. "A Theory of Job Shopping." *The Quarterly Journal of Economics* 92:261–78.

Juhn, C. 1992. "Decline of Male Labor Market Participation: The Role of Declining Market Opportunities." *Quarterly Journal of Economics* 107:79–121.

Juhn, C., K. Murphy, and B. Pierce. 1993. "Wage Inequality and the Rise in Returns to Skill." *Journal of Political Economy.* 101:410–42.

Lichter, D.T., F.B. LeClere, and D.K. McLaughlin. 1991. "Local Marriage Markets and the Marital Behavior of Black and White Women." *American Journal of Sociology* 96:843–67.

Lichter, D.T., G..K. McLaughlin, and D.J. Landry. 1992. "Race and the Retreat From Marriage: A Shortage of Marriageable Men?" *American Sociological Review* 57:781–99.

Lloyd, K.M. and S.J. South. 1996. "Contextual Influences on Young Men's Transition to First Marriage." *Social Forces* 74:1097–19.

Malthus, T.R. 1968. "Essay on the Principle of Population." Chap. 2 in *Population in Perspective*, edited by L.B. Young. New York: Oxford University Press.

Mare, R.D. and C. Winship. 1991. "Socioeconomic Change and the Decline of Marriage for Blacks and Whites." Pp. 175–202 in *The Urban Underclass*, edited by C. Jencks and P.E. Peterson. Washington, DC: The Brookings Institute.

Marini, M.M. 1985. "Determinants of the Timing of Adult Role Entry." *Social Science Research* 14:309–50.

McLanahan, S.S. 1991. "The Two Faces of Divorce: Women's and Children's Interests." Pp. 193–207 in *Macro-Micro Linkages in Sociology*, edited by J. Huber. Newbury Park, CA: Sage.

McLanahan, S.S. and L. Casper. 1995. "Growing Diversity and Inequality in the American Family." Pp. 1–45 in *State of the Union: America in the 1990s*, Vol. 2, *Social Trends*, edited by R. Farley. New York: Russell Sage Foundation.

Modell, J., F.F. Furstenberg, Jr., and T. Hershberg. 1976. "Social Change and Transitions to Adulthood in Historical Perspective." *Journal of Family History* 1:7–32.

Murname, R.J. and F. Levy. 1993. "Why Today's High-School-Educated Males Earn Less Than Their Fathers Did: The Problem and an Assessment of Responses." *Harvard Educational Review* 63:1–19.

Oppenheimer, V.K. 1974. "The Life-Cycle Squeeze: The Interaction of Men's Occupational and Family Cycles." *Demography* 11:227–45.

———. 1982. *Work and the Family: A Study in Social Demography*. New York: Academic Press.

———. 1988. "A Theory of Marriage Timing." *American Journal of Sociology* 94:563–91.

———. 1994. "Women's Rising Employment and the Future of the Family in Industrialized Societies." *Population and Development Review* 20:293–342.

———. 1995. "The Role of Women's Economic Independence in Marriage Formation: A Skeptic's Response to Annemette Sorensen's Remarks." Pp. 236–43 in *Family Formation in Modern Societies and the New Role of Women*. Boulder: Westview Press.

———. 1997. "Women's Employment and the Gain to Marriage: The Specialization and Trading Model." *Annual Review of Sociology* 23:431–53.

Oppenheimer, V.K. and V. Lew. 1995. "Marriage Formation in the Eighties: How Important Was Women's Economic Independence?" Pp. 105–38 in *Gender and Family Change in Industrialized Countries*, edited by K.O. Mason and A. Jensen. Oxford: Clarendon Press.

Oppenheimer, V.K., H. Blossfeld, and A. Wackerow. 1995. "New Developments in Family Formation and Women's Improvement in Educational Attainment in the United States." Pp. 150–73 in *Family Formation in Modern Societies and the New Role of Women*. Boulder: Westview Press.

Oppenheimer, V.K. and M. Kalmijn. 1995. "Life Cycle Jobs." *Research in Social Stratification and Mobility* 14:1–38.

Qian, Z. and S.H. Preston. 1993. "Changes in American Marriage, 1972–87: Availability Conditions and Forces of Attraction by Age and Education." *American Sociological Review* 58:482–95.

Schoen, R. and J. Wooldredge. 1989. "Marriage Choices in North Carolina and Virginia, 1969–71 and 1979–81." *Journal of Marriage and the Family* 41:465–81.

Smith, J.P. 1988. "Poverty and the Family." Pp. 141–72 in *Divided Opportunities: Minorities, Poverty, and Social Policy*, edited by M. Tienda and G.D. Sandefur. New York: Plenum.

South, S.J. and K.M. Lloyd. 1992. "Marriage Opportunities and Family Formation: Further Implications of Imbalanced Sex Ratios. *Journal of Marriage and the Family* 54:440–51.

StataCorp. 1995. *Stata Statistical Software: Release 4.0*. College Station, TX: Stata Corporation.

Teachman, J.D., K.A. Polonko, and G.K. Leigh. 1987. "Marital Timing: Race and Sex Comparisons." *Social Forces* 66:239–68.

Topel, R.H. and M. Ward. 1992. "Job Mobility and the Careers of Young Men." *Quarterly Journal of Economics* 107:441–79.

U.S. Bureau of the Census. 1994. "Marital Status and Living Arrangements: March 1993." Current Population Reports, Series P20-478. Washington, DC: U.S. Government Printing Office.

Watkins, S.C. 1984. "Spinsters." *Journal of Family History* 9:310–25.

Welch, F.R. 1990. "The Employment of Black Men." *Journal of Labor Economics* 9:S26–74.

Wetzel, J.S. 1995. "Labor Force, Unemployment and Earnings." Ch. 2 in *State of the Nation*, Vol. 1, edited by R. Farley. New

York: Russell Sage Foundation.

White, H. 1980. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity." *Econometrica* 48(4):817–38.

Wilson, W.J. and K. Neckerman. 1987. "Poverty and Family Structure: The Widening Gap Between Evidence and Public Policy Issues." Ch. 3 in *The Truly Disadvantaged*, edited by W.J. Wilson. Chicago: University of Chicago Press.

Yamaguchi, K. 1991. *Event History Analysis*. Beverly Hills: Sage Publications.